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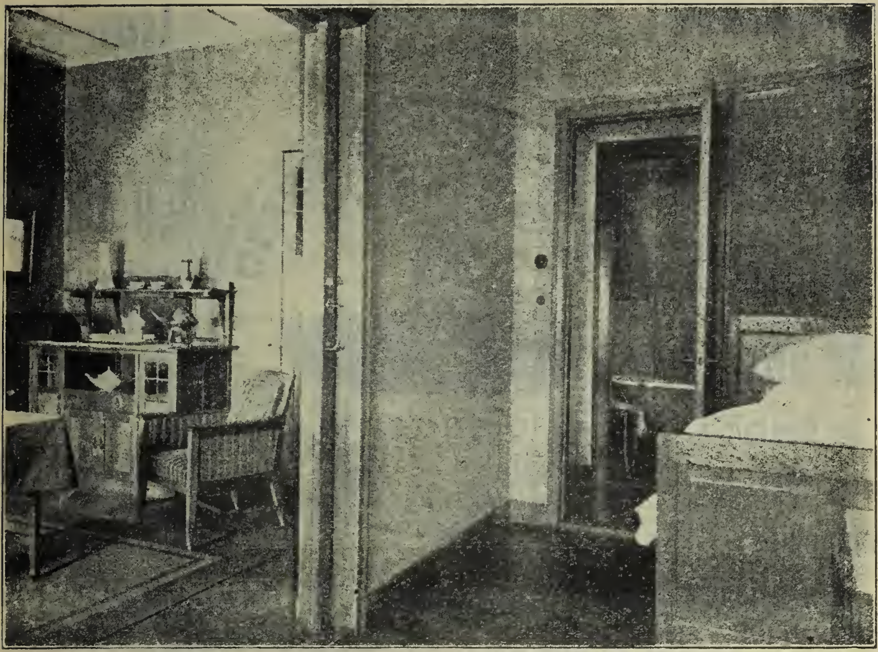

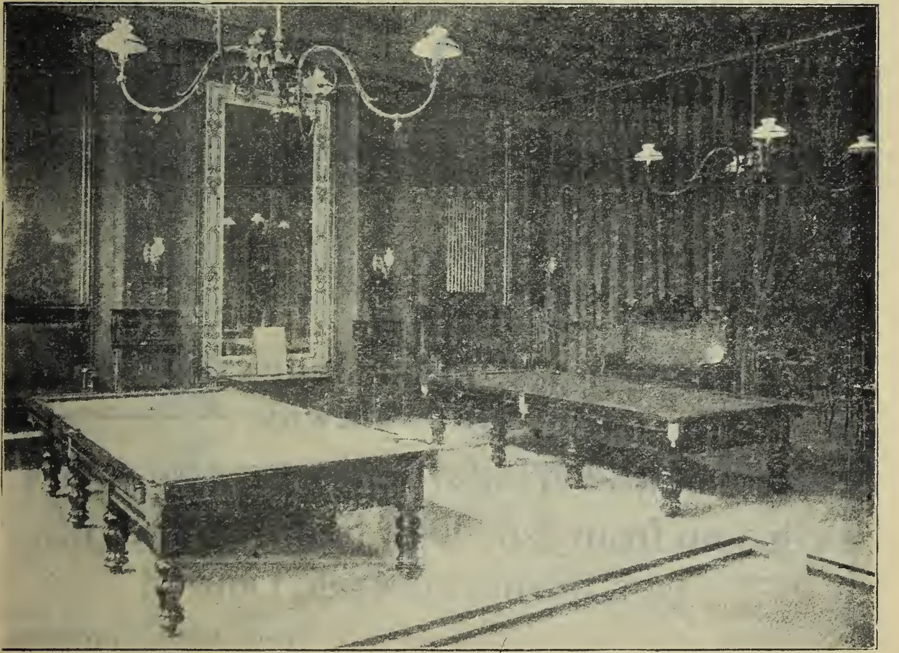

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Salving of the cargo ex „Provençal" s.s., stranded at the *Low Southpier* at *Hoek van Holland.*

Raising of the Schooner „Pride of the West," laden with pipeclay sunk by collision in the River *Maas* near *Schiedam.*

Floating of „Goldsbro" s.s., 3400 tons, with Ballast, stranded at *Kijkduin* (*Nieuwediep.*)

Clearing away by dynamite wreck of „Tynemouth" s.s., off *Terschelling.*

Floating „Yoxford" s.s., stranded on *Maasvlakte* (*Hoek van Holland*) laden with grain, after discharging part of cargo in small craft.

Lifting the large Fishsmack, „Bedachtzaamheid," sunk by collision in the *New Rotterdam Waterway.*

Raising the German Steamer „Ascania," sunk after stranding at *Callantsoog* near *Nieuwediep,* laden with pipeclay.

Floating the English Bark „Rockhurst," stranded at *Goërée* entrance, after discharging her cargo of Timber.

Discharging the cargo of the Dutch Iron Bark F. H. von Lindern, off *Ymuiden.*

Salving the cargo of the British Steamship „Lero" stranded off *Maasvlakte.*

Salving the cargo of the British Steamship „Seagull" sunk in the *Entrance* of the *New-Waterway* by collision.

Lifting of the large Tugboat „Generaal van der Heijden," sunk by collision in the River near *Moerdijk.*

Salving cargo of the Fishsmack „Anna Margaretha," stranded near *Terheyde.*

Salving cargo of the British Steamship „Woodstock," sunk by collision on the *Suikerplaat* near *Terneuzen.*

Floating the Belgian Fishsmack „Februari," stranded off *Nieuwediep.*

Floating the German Steamer „Iris," stranded near *Egmond aan Zee*, after discharging cargo.

Salving cargo of the German Steamer „Desterro," sunk by collision near *Terschelling.*

Salving cargo of the French Steamer „Bordeaux," sunk near *Hansweerd.*

Clearing away by dynamite wreck of „Woodstock" s.s., off *Terneuzen.*

Floating the Dutch Steamer „Ariadne," stranded on *Maasvlakte*, after discharging cargo.

Clearing away by dynamite wreck of „Abington" s.s.. sunk in the River *Schelde* near *Antwerp.*

Floating the Belgian Fishsmack „Mariam Fanny," stranded at the *Southpier* at *Hoek van Holland.*

Clearing away by dynamite wreck of „Lining" s.s., sunk by collision in the *New-Waterway*, after discharging cargo by divers.

Floating the Dutch pilottransport Steamer „Zeemeeuw" sunk in *Goërée* entrance near *Rockanje.*

Lifting of the large Steamdredger „GORINCHEM" sunk in the River *Schelde* near *Antwerp.*

Clearing away by dynamite the wreck of the large steamdredger „YMUIDEN I," sunk off *Monster.*

Floating the English Steamer „BORDEAUX," stranded on the *Maasvlakte*, after discharging part of cargo.

Floating the English 4 masted ship „WATERLOO," high on the *Beach* near *Ouddorp.*

Salving cargo of the Norwegian Bark „KREON," stranded off *Hoek van Holland.*

Salving cargo of the English 4 masted ship „STANLEY," stranded off *Texel Island.*

Salving cargo of the Norwegian Bark „TALISMAN," stranded off *Schiermonnikoog.*

Bringing in at *Harlingen* of Danish Schooner „FLORA."

Floating the Dutch Steamer „GELDERLAND," stranded off *Hoek van Holland*, after discharging part of cargo.

Lifting of the Dutch Torpedoboat „ETNA," sunk near *Hellevoetsluis.*

Lifting of the large Rhinecraft „ALBERT OTTEN," sunk in the *Waal* near *Nijmegen*, loaded with basalt.

Lifting of the Tugboat „LEONARD," sunk by collision in the *mouth* of the *New-Waterway.*

Salving cargo of the German Bark „ELSE," stranded off *Maasvlakte.*

Salving cargo of the Norwegian Schooner „HUMOR," stranded on the *Northpier* at *Hoek van Holland*, and clearing away the wreck by dynamite.

Salving material of the Spanish Steamer „TRIANO," stranded and broken up in the *New-Waterway.*

Lifting of „ROSINA MENDL" s.s. 2370 tons, sunk by collision in River *Maas* near *Maassluis.*

Floating the Greek s.s. „ANDRIANA STATHATOS" 2498 tons, stranded *Lower Southpier Hoek van Holland*, after discharging part of cargo.

Lifting of the 3 mastship „ANNESLEY" 1694 tons, capsised in *Binnenhaven* at *Rotterdam.*

Floating dutch tanksteamer „CHESTER" 2531 tons, stranded on *Maasvlakte.*

Floating German Steamer „HABSBURG" 3105 tons, stranded on *Banjaard.*

Clearing away by dynamite the wreck of the dutch Schooner „ANTJE LINA," stranded near *Petten.*

Salving the dutch fishsmack „NESTORINE II," stranded on *Maasvlakte.*

Clearing away by dynamite the wreck of the British Steamer „HARROW," in Zuiderhaaks near *Nieuwediep.*

Floating British Steamer „JOHN FOTHERGILL" 2730 tons, stranded *Lower Southpier Hoek van Holland.*

Floating German Steamer „TIMANDRA" 1257 tons, stranded on *Banjaard*, after discharging part of cargo.

Floating British Steamer „ZINGARA" 3463 tons, stranded *North* of *New-Waterway Hoek van Holland.*

Salving material of the Spanish Steamer „BAT," stranded and wrecked *Lower Southpier Hoek van Holland.*

Floating Russian Steamer „ANNA" 1832 tons, stranded off *Scheveningen.*

Lifting of the British Schooner „LUCINDA." at *Hoek van Holland.*

Floating British s.s. „WESTFIELD" 3418 tons, stranded off *Hoek van Holland.*

Lifting German Steamer „Lipsos," 2381 tons, sunk by collision in River *Maas* off *buoy 7*, *Rotterdam.*

Clearing away by dynamite the wreck of the British Steamer „Woolwich," 3258 tons, sunk by collision in River *Maas* near *Maassluis* and broken up.

Lifting Dutch Steamer „Gelderland," 1539 tons. sunk by collision with the wreck of Woolwich s.s.

Floating Norwegian Steamer „Leander," 2968 tons, stranded *Northpier New-Waterway* at *Hoek van Holland*, after discharging part of cargo ironore.

Salving cargo of timber of Norwegian brig „Norden," stranded and wrecked *Northpier Hoek van Holland.*

Lifting of the British Steamer „Grenadier," 1004 tons. sunk by collision in River *Maas* near *Vlaardingen*,

Floating of the British Steamer „Emma," 2893 tons, high on *Lower Southpier*, after discharging almost all her cargo.

Lifting of the Rhinecraft „Carl August," 1700 tons, laden with 1200 tons of ironore, sunk in 35 feet of water in *River Maas* near *Rotterdam.*

Lifting of British Steamer „Eden Hall," 3610 tons, full cargo of grain, sunk by collision in *River Maas* near *Rotterdam.*

Sucking 345 tons of grain out of sunken Belgian lighter „Le Rapide."

Lifting of Norwegian Bark „Aster," 415 tons, cargo wood, brought in at *Rotterdam*, bow seriously damaged by collision off *West Hinder.*

Lifting of Belgian s.s. „Lys" 3272 tons, sunk by collission in the *Spoorhaven. Rotterdam.*

Floating the German s.s. „Venus" 1222 tons, high on the beach near *Wassenaar.*

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* Titan	325	„	Argo	100	„
Thames	1200	I.H.P.	Nelly	150	I.H.P.
Schelde	1000	„	Eros	125	„
Maas	900	„	Rio	110	„
Scheveningen	400	„	Triton	100	„
* Mars	250	„	Iris	100	„
Hector	250	„	Flora	90	„
Fram	225	„	Neptun	80	„
Arion (Icebreaker)	200	„	Stella	75	„
Leonard	200	„	Gerard	70	„
Ceres	150	„	Daisy	60	„
Venus	150	„	Reserve I	125	„

Building S.S. „SEINE" 800 I.H.P.

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* The steamtug "TITAN" is provided with a large centrifugal pump, capable of discharging 15 tons of water per minute and with a double acting piston-pump to discharge 5 tons of water per minute and also to be used as a fire-engine.

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The company disposes of a fleet of 26 steamtugs, ranging from 60 to 1200 indicated horsepower and make contracts for the towage and assistance of steamers and sailing-vessels at the ports of Rotterdam, Amsterdam, Vlaardingen, Maassluis and Schiedam.

Close contracts for the towage of ships, disabled steamers, barges and dredging plant *to and from all ports of the world,* to tow off stranded vessels, to salve ships and cargoes sunk or ashore on the coast of Holland and Belgium.

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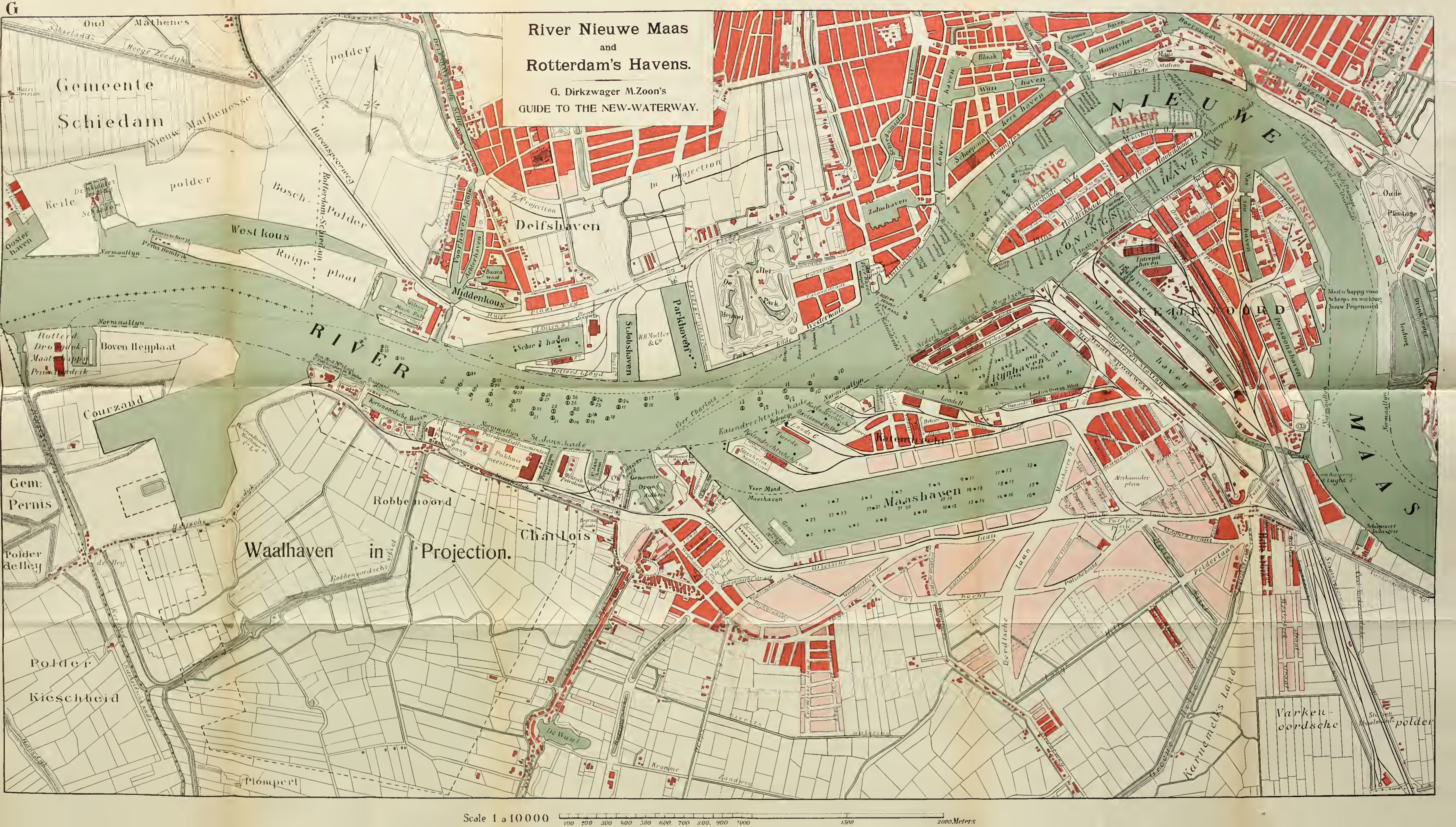

River Nieuwe Maas
and
Rotterdam's Havens.

G. Dirkzwager M.Zoon's
GUIDE TO THE NEW-WATERWAY.

TARIFF OF HARBOURDUES FOR
Seagoing sailingships and steamers

IN ROTTERDAM:

No. 1. Steamers.

a.	measuring 650 M^3 and under, per measured M^3	*f* 0,03
b.	„ above 650 till 1000 M^3 „ „ „	„ $0,03^5$
c.	„ „ 1000 M^3 „ „ „	„ $0,03^{75}$

No 2. Sailingships.

a.	measuring 600 M^3 and under, per measured M^3	*f* 0,05
b.	„ above 600 till 700 M^3. „ „ „	„ 0,06
c.	„ „ 700 „ 800 „ „ „ „	„ 0,07
d	„ „ 800 „ 900 „ „ „ „	„ 0,08
e.	„ „ 900 „ 1000 „ „ „ „	„ 0,09
f.	„ „ 1000 „ 1100 „ „ „ „	„ 0,10
g	„ „ 1100 „ 1200 „ „ „ „	„ 0,11
h.	„ „ 1200 „ 1300 „ „ „ „	„ 0,12
i.	„ „ 1300 „ 1400 „ „ „ „	„ 0,13
k.	„ „ 1400 „ 1500 „ „ „ „	„ 0,14
l.	„ „ 1500 M^3. „ „ „ „	„ 0,15

The harbour-dues are levied on the gross cubic Mètres, according to the International Measurement (Moorsom's System), for every time, that a vessel or steamer, frequents the port of Rotterdam.

IN MAASSLUIS:

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per cubic metre (gross measurement) *f* 0,06
No. 2. Vessels, proceeding to Maassluis for repairs pay half tariff.

IN VLAARDINGEN:

No. 1. Per cubic metre (nett measurement) . . . . . . *f* 0.06
No. 2. Vessels, proceeding to Vlaardingen for repairs pay half tariff.

TARIFF OF HARBOURDUES FOR Seagoing sailingships and steamers IN SCHIEDAM.

a. For Sailing-ships . . . . per M^3 *f* 0,05 for every voyage.
b. „ steamers and sea-going lighters
per M^3 *f* 0,03 for every voyage.

Harbourdues partially.

For sea-going ships arriving at, or leaving from this port with broken cargo, only dues are paid on such cargo:

For general cargo . . . . per 1000 K.G. *f* 0,0625
„ wood. . . . . per M^3 „ 0,05

The dues levied for ships with wood are reckoned as follows:

1 Standard equal to 5 M^3.

1 Norwegian or Groninger tult equal to 6.50 M^3 with a minimum of ¼ of the total amount according to the above tariff.

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a.	measuring 650 M^3 and less	per M^3 *f*	0,03
b.	„ from 651 M^3 till 1000 M^3. . .	„ „ „	$0,03^5$
c.	„ more than 1000 M^3	„ „ „	$0,03^{75}$

No. 2. Sailingvessels.

a.	measuring 650 M^3 and less	per M^3 *f*	$0,03^5$
b.	„ more than 650 M^3	„ „ „	0,06

Tariff of Telegram Messages,

from Holland to

	As base.	For each word.	Minimum.
Belgium	*f* 0,25	*f* 0,02½[1]	*f* 0,35
the German Empire		„ 0,06½	„ 0,35
Great Britain		„ 0,10	„ 0,50
Austria		„ 0,10	„ 0,50
Bulgaria		„ 0,16	„ 0,50
Denmark		„ 0,10½	„ 0,50
France		„ 0,08	„ 0,50
Greece		„ 0,28½	—
Greek Archipelago		„ 0,30½	—
Italy		„ 0,14½	„ 0,50

	For each word.	Minimum.
Luxemburgh	*f* 0,06½	*f* 0,40
Norway	„ 0,13	„ 0,50
Portugal	„ 0,16½	„ 0,50
Roumania	„ 0,14½	„ 0,50
Russia (European)	„ 0,18½	„ 0,50
Servia	„ 0,14½	„ 0,50
Spain	„ 0,14½	„ 0,50
Sweden	„ 0,12½	„ 0,50
Switserland	„ 0,10½	„ 0,50

For Holland

1 - 10	*words*	*f* 0,25	36 - 40	*words*	*f* 0,55
11 - 15	„	„ 0,30	41 - 45	„	„ 0,60
16 - 20	„	„ 0,35	46 - 50	„	„ 0,65
21 - 25	„	„ 0,40	51 - 60	„	„ 0,70
26 - 30	„	„ 0,45	61 - 70	„	„ 0,75
31 - 35	„	„ 0,50	71 - 80	„	„ 0,80

and for each 10 *words more* „ 0,05

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[1] Till the 50th word. For each word above 50 *f* 0.01¼.

1st Month. JANUARY. 31 Days.

Sun rises.		Sun sets.		The Moon's changes.		
1 at	8.14	1 at	3.54	3	New Moon	10. 4 evening.
10 „	8.10	10 „	4. 4	10	First Quarter	2.13 „
19 „	8. 2	19 „	4.18	18	Full Moon	1.57 „
28 „	7.51	28 „	4.34	26	Last Quarter	3.21 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
W 1	—	0.10	5.10	5.26	7.45	8.10	27	4.59 AM	1.58 PM
Th 2	0.38	0.55	5.53	6. 5	8.45	9. 0	28	6.22	2.38
F 3	1.23	1.38	6.26	6.42	9.31	9.45	●	7.39	3.31
S 4	2. 9	2.25	7. 4	7.25	10.18	10.35	1	8.45	4.39
S 5	2.59	3.15	7.48	8.11	11. 7	11.21	2	9.37	5.58
M 6	3.48	4. 2	8.33	9. 1	11.52	—	3	10.17	7.23
Tu 7	4.36	4.51	9.27	10. 3	0. 8	0.37	4	10.47	8.47
W 8	5.30	5.46	10.23	11. 8	0.51	1.24	5	11.11	10. 9
Th 9	6.25	6.43	11.22	—	1.41	2. 9	6	11.32	11.28
F 10	7.18	7.41	0.11	0.28	2.26	2.58	☽	11.51	—
S 11	8.12	8.41			2.39	3. 6	8	0.10 PM	0.43 AM
S 12	9.16	9.54			3.55	4.30	9	0.30	1.57
M 13	10.32	11.11		4. 6	5.14	6.28	10	0.52	3. 9
Tu 14	11.37	—	4.42		6.49	6.48	11	1.18	4.18
W 15	0.11	0.35			7.21	7.46	12	1.50	5.24
Th 16	1. 0	1.16			8.10	8.30	13	2.30	6.25
F 17	1.43	1.56	6.55	7. 7	9.34	9.46	14	3.17	7.19
S 18	2.19	2.29	7.25	7.40	10.11	10.22	○	4.12	8. 4
S 19	2.58	3. 8	7.55	8. 9	10.45	10.52	16	5 13	8.41
M 20	3.35	3.44	8.29	8.45	11.20	11.27	17	6.18	9.11
Tu 21	4.11	4.16	9. 1	9.20	11.52	11.58	18	7.25	9.35
W 22	4.40	4.46	9.35	9.56	—	0.19	19	8.33	9.56
Th 23	5.12	5.20	10.10	10.43	0.24	0.44	20	9.41	10.15
F 24	5.49	5.58			0.52	0.21	21	10.51	10.32
S 25	6.26	6.39			0.43	1. 4	22	—	10.50
S 26	7. 9	7.31			1.32	1.54	☾	0. 2 AM	11. 8
M 27	7.59	8.26			2.21	2.48	24	1.16	11 29
Tu 28	8.59	9.39			3.39	4.20	25	2.34	11.54
W 29	10.19	11. 4		3.52	5. 4	6.21	26	3.53	0.28 PM
Th 30	11.35	—	4.25	4.52	6.54	7.35	27	5.11	1.12
F 31	0.10	0.32	5.24	5.46	8. 9	8.38	28	6.22	2.11

January 3d. TOTAL ECLIPSE of the SUN. (Not visible in Holland.)

2nd Month. FEBRUARY. 29 Days.

Sun rises.	Sun sets.	The Moon's changes.
1 at 7.45	1 at 4.42	2 New Moon 8.56 morning.
10 „ 7.29	10 „ 4.59	9 First Quarter 4.47 „
19 „ 7.11	19 „ 5.16	17 Full Moon 9.25 „
28 „ 6.52	28 „ 5.33	25 Last Quarter 3.44 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
S 1	1. 6	1.23	6. 6	6.31	9. 8	9.30	29	7.22 AM	3.24 PM
S 2	2. 0	2.14	6.49	7.16	10. 2	10.23	●	8. 8	4.48
M 3	2.49	3. 4	7.34	8 3	10.52	11.13	1	8.43	6.16
Tu 4	3.37	3.51	8.23	8.49	11.43	11.56	2	9.11	7.43
W 5	4.24	4.39	9. 9	9.38	—	0.28	3	9.34	9. 6
Th 6	5.13	5.27	9.58	10.30	0.36	1. 6	4	9.54	10.25
F 7	5.58	6.17	10.49	11.26	1. 6	1.39	5	10.14	11.42
S 8	6.44	7. 3	11.49	—	1.47	2.26	6	10.34	—
S 9	7.31	7.56	0.30	0.54	2.40	3.18	☽	10.56	0.57 AM
M 10	8.24	9. 4			2.59	3.27	8	11.21	2. 8
Tu 11	9.38	10.28			4.19	4.55	9	11.51	3.16
W 12	11. 2	11.47			5.39	6.15	10	0.28 PM	4.19
Th 13	—	0.11			6.52	7.23	11	1.13	5.15
F 14	0.46	1. 6			7.48	8.10	12	2. 5	6. 3
S 15	1.34	1.43			8.28	8.46	13	3. 4	6.42
S 16	2.11	2.17	7. 9	7.24	9.50	9.59	14	4. 8	7.14
M 17	2.46	2.52	7.37	7.54	10.23	10.33	○	5.15	7.40
Tu 18	3.17	3.25	8. 8	8.25	10.58	11. 7	16	6.23	8. 2
W 19	3.47	3.55	8.39	8.55	11.30	11.32	17	7.32	8.21
Th 20	4.19	4.22	9. 7	9.26	11.56	11.52	18	8.42	8.39
F 21	4.49	4.57	9.42	10. 6	—	0.16	19	9.53	8.56
S 22	5.21	5.32			0. 6	0. 5	20	11. 5	9,13
S 23	5.57	6.12			0. 1	0.22	21	—	9.33
M 24	6.36	6.57			0.44	1. 9	22	0.20 AM	9.56
Tu 25	7.20	7.53			1.40	2.10	☾	1.36	10.25
W 26	8.20	9. 6			2.55	3.33	24	2.52	11. 3
Th 27	9.45	10.41		3.17	4.19	5.40	25	4. 4	11.53
F 28	11.13	11.58	3.54	4.35	6.32	7.15	26	5. 7	0.57 PM
S 29	—	0.20	5. 6	5.37	7.58	8.27	27	5.58	2.15

3rd Month. MARCH. 31 Days.

Sun rises.	Sun sets.	The Moon's changes.
1 at 6.47	1 at 5.36	2 New Moon 7.17 evening.
10 „ 6.27	10 „ 5.53	9 First Quarter 10. 2 „
19 „ 6. 6	19 „ 6. 9	18 Full Moon 2.48 morning.
28 „ 5.44	28 „ 6.25	25 Last Quarter 0.52 evening.

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
S 1	0.59	1.17	5.51	6.22	8.56	9.21	28	6.37AM	3.40PM
M 2	1.52	2. 3	6.34	7. 3	9.50	10. 7	●	7. 8	5. 8
Tu 3	2.38	2.49	7.17	7.51	10.40	10.54	1	7.33	6.34
W 4	3.21	3.32	8. 6	8.32	11.31	11.32	2	7.55	7.58
Th 5	4. 1	4.15	8.50	9.14	—	0.10	3	8.15	9.19
F 6	4.44	4.58	9.36	9.57	0. 8	0.45	4	8.35	10.37
S 7	5.29	5.43	10.22	10.48	0.36	1.16	5	8.57	11.52
S 8	6. 7	6.25	11.12	11.41	1.14	1.55	6	9.21	—
M 9	6.47	7.13	—	0.11	1.59	2.38	☽	9.50	1. 4AM
Tu 10	7.36	8.15	0.47	1.14	3. 1	3.30	8	10.25	2.10
W 11	8.48	9.38			3.16	3.53	9	11. 7	3.10
Th 12	10.21	11.17			4.47	5.37	10	11.57	4. 1
F 13	11.44	—			6.16	6.59	11	0.55PM	4.43
S 14	0.27	0.44			7.20	7.51	12	1.58	5.17
S 15	1.17	1.26			8. 5	8.24	13	3. 4	5.44
M 16	1.50	1.57			8.37	8.49	14	4.12	6. 7
Tu 17	2.21	2.28	7. 8	7.27	9.48	9.59	15	5.21	6.27
W 18	2.53	2.58	7.35	7.55	10.21	10.28	○	6.31	6.45
Th 19	3.23	3.27	8. 4	8.30	10.54	10.57	17	7.43	7. 2
F 20	3.50	3.55	8.43	9. 8	11.27	11.23	18	8.56	7.19
S 21	4.17	4.28	9.24	9.39	11.57	11.50	19	10.11	7.38
S 22	4.55	5. 8	9.56	10.14	—	0.21	20	11.27	8. 0
M 23	5.33	5.50			0.16	0. 7	21	—	8.26
Tu 24	6.13	6.35			0.20	0.55	22	0.43AM	9. 0
W 25	6.54	7.27			1.24	1.59	☾	1.55	9.44
Th 26	7.56	8.44			2.25	3. 6	24	3. 0	10.42
F 27	9.27	10.25			3.50	4.46	25	3.53	11.53
S 28	11. 4	11.56		4.36	5.35	7. 4	26	4.35	1.13PM
S 29	—	0.14	4.55	5.32	7.44	8.18	27	5. 8	2.37
M 30	0.53	1.10	5.43	6.16	8.43	9.10	28	5.34	4. 3
Tu 31	1.41	1.55	6.23	6.52	9.31	9.51	29	5.56	5.28

4th Month. APRIL. 30 Days.

Sun rises.		Sun sets.	
1 at	5.35	1 at	6.32
10 „	5.14	10 „	6.47
19 „	4.54	19 „	7. 3
28 „	4.35	28 „	7.19

The Moon's changes			
1	New Moon	5.22	morning.
8	First Quarter	4.52	evening.
16	Full Moon	5.15	„
23	Last Quarter	7.26	„
30	New Moon	3.53	„

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
W 1	2 23	2.36	7. 3	7.30	10.23	10.28	●	6.16 AM	6.50 PM
Th 2	3. 2	3.16	7.46	8. 9	11. 5	11. 5	1	6.36	8.11
F 3	3.40	3.54	8.28	8.49	11.42	11.37	2	6.57	9.30
S 4	4.16	4.35	9.13	9.32	—	0.18	3	7.20	10.45
𝔖 5	4.57	5 19	9.57	10.17	0.12	0.41	4	7.47	11.56
M 6	5.35	6. 0	10.46	11. 8	0.47	1.16	5	8.19	—
Tu 7	6.15	6 41	11.42		1.34	2. 3	6	8.59	1. 0 AM
W 8	6.59	7.36	0. 5		2.25	2.10	☽	9.47	1.56
Th 9	8. 3	8.49			2.34	3.13	8	10.42	2.42
F 10	9 28	10.23			3.51	4.49	9	11.44	3.19
S 11	11. 1	11 49			5.28	6.23	10	0.49 PM	3 48
𝔖 12	—	0. 7			6.45	7.21	11	1.57	4.12
M 13	0.42	0.53			7.30	7.54	12	3. 6	4.33
Tu 14	1.23	1.31			8. 4	8.23	13	4.16	4.51
W 15	1.52	2. 2	6.39	7. 8	9.20	9.26	14	5.28	5. 8
Th 16	2.23	2.35	7.12	7.39	9.51	9.52	○	6.42	5.25
F 17	2.54	3 4	7.52	8. 8	10.24	10.21	16	7 58	5.43
S 18	3.26	3.37	8 20	8.38	10.57	10.57	17	9.15	6. 3
𝔖 19	3 55	4.11	8.54	9. 9	11.36	11 34	18	10.33	6.28
M 20	4.27	4.52	9.28	9.45	—	0. 5	19	11.48	7. 0
Tu 21	5. 7	5.35		10.30	0.15	0. 1	20	—	7 41
W 22	5.51	6.18	11 7	11.34	1. 2	1 38	21	0.56 AM	8.34
Th 23	6.40	7.19		0.19	2. 7	2.45	☾	1.53	9.40
F 24	7.48	8.36			2.28	3.17	23	2.37	10.57
S 25	9.16	10.13			3.58	4.54	24	3.11	0.19 PM
𝔖 26	10 51	11.39		4 27	5.32	6.59	25	3.39	1.42
M 27	11.54	—	4.36	5.18	7.30	8. 2	26	4. 1	3. 4
Tu 28	0.33	0.48	5.21	6. 1	8.23	8 47	27	4.20	4.26
W 29	1.20	1.36	6. 3	6.38	9.12	9.25	28	4.39	5.46
Th 30	2. 3	2.19	6 44	7.13	9.53	9.57	●	4.59	7. 6

5th Month. MAY. 31 Days.

Sun rises.		Sun sets.		The Moon's changes.		
1 at	4.29	1 at	7.24	8	First Quarter	11.43 morning.
10 „	4.13	10 „	7.39	16	Full Moon	4.52 „
19 „	3.59	19 „	7.53	23	Last Quarter	0.37 „
28 „	3.48	28 „	8. 5	30	New Moon	3.34 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
F 1	2.48	3. 4	7.28	7 50	10.32	10.35	1	5.20AM	8.23PM
S 2	3.22	3.44	8.10	8.34	11. 7	11.19	2	5.45	9.37
S 3	3.59	4.21	8.56	9.13	11.46	11.59	3	6.15	10.46
M 4	4.32	5. 0	9.35	9.52	—	0.19	4	6.51	11.47
Tu 5	5. 8	5.38	10.17	10.36	0.34	0.53	5	7.36	—
W 6	5.47	6.16			1.13	0.51	6	8.29	0.37AM
Th 7	6.31	7. 3			1.10	1.55	7	9.29	1.18
F 8	7.26	8. 3			2.10	2.51	☽	10.33	1.51
S 9	8.34	9.20			3. 3	3.48	9	11.40	2.17
S 10	9.54	10.42			4.15	5. 8	10	0.49PM	2.38
M 11	11.13	11.52			5.34	6.15	11	1.58	2.57
Tu 12	—	0. 9			6.30	6.56	12	3. 9	3.14
W 13	0.37	0.52			7. 9	7.30	13	4.22	3.30
Th 14	1.17	1.27			7.46	8. 6	14	5.37	3.47
F 15	1 50	2. 2	6.42	7. 3	9.19	9.27	15	6.55	4. 6
S 16	2.24	2.37	7.10	7.31	10. 3	10.10	○	8.16	4.29
S 17	2.59	3.19	7.43	8. 5	10.48	10.57	17	9.35	4.58
M 18	3.34	3.58	8.20	8.44	11.29	11.46	18	10.48	5.36
Tu 19	4.10	4.39	9. 2	9.26	—	0.12	19	11.50	6 26
W 20	4.48	5.25	9.51	10.17	0.33	0.50	20	—	7.30
Th 21	5.38	6.15	10.54	11.16	1.18	1.46	21	0.39AM	8.45
F 22	6.35	7.15		0. 9	2.12	2.53	22	1.16	10. 6
S 23	7.43	8.25	0.33	1.32	3.20	4. 5	☾	1.45	11.28
S 24	9. 5	9.50			3.42	4.30	24	2. 8	0.50PM
M 25	10.23	11. 6			5. 0	5.42	25	2.28	2.11
Tu 26	11.39	—		5. 7	6. 4	7.16	26	2 46	3.30
W 27	0.15	0.35	5. 8	5.50	7.45	8. 6	27	3. 4	4.47
Th 28	1. 4	1.23	5.56	6.31	8.36	8.52	28	3.24	6. 4
F 29	1.47	2. 5	6.38	7. 4	9.26	9.33	29	3.47	7.19
S 30	2.26	2.44	7.15	7.39	10. 8	10.14	●	4.13	8.31
S 31	3. 3	3.23	7.49	8.16	10.48	10.58	1	4.46	9.36

6th Month. JUNE. 30 Days.

Sun rises.			Sun sets.			The Moon's changes.		
1	at	3.45	1	at	8.10	7	First Quarter	5.16 morning.
10	„	3.40	10	„	8.19	14	Full Moon	2.15 evening.
19	„	3.39	19	„	8.24	21	Last Quarter	5.46 morning.
28	„	3.42	28	„	8.24	28	New Moon	4.51 evening.

First tide from 0 A.M. — Second tide from 0 P.M.

Days.		Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
		1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
M	1	3.38	4. 5	8.30	8.53	11.19	11.47	2	5.27 AM	10.31 PM
Tu	2	4.13	4.40	9.11	9.33	11.56	—	3	6.17	11.16
W	3	4.49	5.16	9.53	10.13	0.25	0.33	4	7.15	11.52
Th	4	5.26	5.57	10.43	11. 1	0.58	1.15	5	8.18	—
F	5	6. 8	6.39			1.37	1.13	6	9.24	0.20 AM
S	6	6.56	7.28			1 30	2.10	☽	10.32	0.43
𝕾	7	7.51	8.31			2.27	3. 3	8	11.41	1. 3
M	8	8.58	9.38			3.15	3.52	9	0.50 PM	1.20
Tu	9	10. 7	10.46			4.20	5. 6	10	2. 1	1.36
W	10	11.14	11.45			5.27	6. 5	11	3.14	1.52
Th	11	—	0. 7			6.24	6.58	12	4.30	2.10
F	12	0.32	0.51			7.17	7.49	13	5.50	2.30
S	13	1.13	1.33	6. 4	6.32	8.51	9.15	14	7.11	2.56
𝕾	14	1.50	2.15	6.41	7. 3	9.38	10. 2	○	8.29	3.29
M	15	2.31	2.59	7.21	7.45	10.25	10.54	16	9.38	4.14
Tu	16	3 14	3.45	8. 0	8.32	11. 8	11.47	17	10.34	5.14
W	17	3.59	4.29	8.51	9.18	—	—	18	11.17	6.27
Th	18	4.44	5.18	9.44	10. 9	0.35	0.43	19	11.49	7.49
F	19	5 39	6.17	10.44	11. 9	1.13	1.34	20	—	9.14
S	20	6.36	7.11		0. 1	2. 5	2.40	21	0.14 AM	10.38
𝕾	21	7.35	8.13	0.19	1.16	3. 5	3.39	☾	0.35	11.59
M	22	8.43	9.20			3.15	3.54	23	0.54	1.18 PM
Tu	23	9.55	10.37			4.24	5. 8	24	1.12	2.36
W	24	11.11	11.45		4.45	5.34	6.46	25	1.31	3.52
Th	25	—	0.12	4.54	5.32	7.26	7.46	26	1.51	5. 6
F	26	0.40	1. 2	5.42	6.13	8.22	8.37	27	2.16	6.18
S	27	1.23	1.45	6.25	6.50	9. 8	9.26	28	2.46	7.25
𝕾	28	2. 3	2.26	7. 1	7.23	9.48	10. 9	●	3.23	8.24
M	29	2.41	3. 8	7.38	7.59	10.27	10.50	1	4.10	9.13
Tu	30	3.21	3.47	8.13	8.37	11. 1	11.29	2	5. 5	9.52

June 28th. ANNULAR ECLIPSE of the SUN. (Not visible in Holland.)

7th Month. JULY. 31 Days.

Sun rises.	Sun sets.	The Moon's changes.
1 at 3.44	1 at 8.24	6 First Quarter 8.35 evening.
10 „ 3.52	10 „ 8.19	13 Full Moon 10. 8 „
19 „ 4. 3	19 „ 8.10	20 Last Quarter 0.21 „
28 „ 4.16	28 „ 7.57	28 New Moon 7.36 morning.

First tide from 0 A.M. — Second tide from 0 P.M.

Days.		Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
		1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
W	1	3.54	4.22	8.54	9.11	11.37	—	3	6. 6 AM	10.23 PM
Th	2	4.28	4.55	9.34	9.50	0. 2	0.11	4	7.12	10.48
F	3	5. 4	5.34	10.17	10.30	0.35	0.46	5	8.19	11. 8
S	4	5.40	6.13			1. 7	0.28	6	9.27	11.26
S	5	6.24	6.53			0.54	1.20	7	10.35	11.42
M	6	7. 6	7.37			1.37	2. 3	☽	11.43	11.58
Tu	7	7.59	8.32			2.20	2.51	9	0.54 PM	—
W	8	9. 3	9.35			3.20	4. 1	10	2. 7	0.14 AM
Th	9	10.11	10.44			4 29	5.15	11	3.23	0.32
F	10	11.21	11.42			5.51	6.28	12	4.42	0.55
S	11	—	0.15		5.29	6.57	8. 9	13	6. 2	1.24
S	12	0.33	1. 4	5.46	6. 6	8.33	9. 2	14	7 17	2. 2
M	13	1.22	1.51	6.23	6.46	9.20	9.55	○	8.21	2.54
Tu	14	2. 8	2.41	7. 8	7.27	10.12	10.43	16	9.11	4. 3
W	15	2.58	3.33	7.50	8.13	11. 0	11.33	17	9 48	5.24
Th	16	3.46	4.20	8 39	9. 2	11.48	—	18	10.17	6.51
F	17	4.31	5.11	9.34	9.55	0.20	0.30	19	10.40	8.18
S	18	5.23	6. 3	10.31	10.48	1. 1	1.14	20	11. 0	9.43
S	19	6.19	6.53	11.34	11.53	1.46	2. 3	21	11.18	11. 5
M	20	7.12	7.43		0.42	2.37	2.53	☾	11.37	0 24 PM
Tu	21	8. 7	8.42			2.36	3.10	23	11.57	1.41
W	22	9.19	9.55			3 46	4.29	24	—	2.57
Th	23	10.32	11. 5		4.13	5. 3	6.13	25	0.20 AM	4. 9
F	24	11.45	—	4.39	5.14	7. 2	7.27	26	0.48	5.17
S	25	0.12	0.44			7.19	7 46	27	1 23	6.18
S	26	1. 4	1.30			8. 9	8.32	28	2. 6	7.10
M	27	1.43	2. 9	6.53	7.13	9.31	9.56	29	2.58	7.52
Tu	28	2.20	2.48	7.28	7.44	10. 9	10 34	●	3.57	8 25
W	29	2.59	3.27	8. 0	8.18	10.43	11.10	1	5. 1	8.52
Th	30	3.36	4. 2	8.33	8.51	11 16	11.43	2	6. 8	9.14
F	31	4. 7	4.32	9. 6	9.22	11.47	—	3	7.16	9.32

8th Month. AUGUST. 31 Days.

Sun rises.	Sun sets	The Moon's changes.
1 at 4.22	1 at 7.50	5 First Quarter 10. 0 morning.
10 „ 4.37	10 „ 7.34	12 Full Moon 5.18 „
19 „ 4.52	19 „ 7.16	18 Last Quarter 9.45 evening.
28 „ 5. 7	28 „ 6.56	26 New Moon 11.19 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
S 1	4.34	5. 3	9.43	9.53	0.12	0.12	4	8.24 AM	9.48 PM
S 2	5. 8	5.35	10.19	10.36	0.40	0.38	5	9.32	10. 3
M 3	5.44	6.11			1. 9	0.25	6	10.40	10.19
Tu 4	6.25	6 50			0.47	1.10	7	11.51	10.36
W 5	7.11	7.36			1.32	1.58	☽	1. 4 PM	10.56
Th 6	8. 3	8.32			2.16	2.47	9	2.20	11.21
F 7	9. 9	9.44			3.26	4.13	10	3 37	11.53
S 8	10.33	11. 3			4.52	5.37	11	4.53	—
S 9	11.43	—	4.26	4.58	6.53	7.38	12	6. 2	0.37 AM
M 10	0. 4	0.40	5.24	5.43	8. 3	8.38	13	6.58	1.37
Tu 11	0.58	1.34	6 10	6.30	9. 2	9.35	14	7.42	2.52
W 12	1 47	2.25	6.56	7.13	9.57	10.29	○	8.15	4.18
Th 13	2.39	3.11	7.38	7 57	10.46	11.17	16	8.41	5.47
F 14	3.29	4. 1	8.22	8.44	11.31	—	17	9. 3	7.16
S 15	4.13	4.48	9.10	9 29	0. 5	0.15	18	9.22	8.43
S 16	5. 2	5.34	10. 0	10.21	0.49	0.47	19	9.41	10. 6
M 17	5.49	6.18	10.54	11.16	1.23	1.27	20	10. 1	11.27
Tu 18	6.40	7. 5	11.54		2. 2	2.11	☾	10.23	0.45 PM
W 19	7.30	7.56	0 16	1. 0	2.48	3. 4	22	10 50	2. 0
Th 20	8.32	9. 6			2.51	3.31	23	11.23	3.10
F 21	9.56	10.31			4.14	5. 5	24	—	4.13
S 22	11.20	11.50			5.47	6.27	25	0. 3 AM	5. 8
S 23	—	0.24			7. 6	7.32	26	0 53	5.53
M 24	0.43	1.11			7.59	8.17	27	1.50	6.29
Tu 25	1.22	1.53	6.44	6.56	9 18	9.41	28	2.53	6 57
W 26	1.58	2.27	7.14	7.24	9.52	10.15	●	3.59	7.19
Th 27	2.33	3. 0	7.41	7.52	10.22	10.44	1	5. 7	7.38
F 28	3. 9	3.33	8 9	8.21	10.50	11.15	2	6.15	7.55
S 29	3.41	4. 4	8.40	8.51	11.18	11.44	3	7 23	8.11
S 30	4.11	4.35	9.12	9.24	11.40	—	4	8.32	8.26
M 31	4.39	5. 6	9.45	10. 2	0. 9	0. 0	5	9.41	8.42

9th Month. SEPTEMBER. 30 Days.

Sun rises.	Sun sets.	The Moon's changes.
1 at 5.13	1 at 6.47	3 First Quarter 9.10 evening.
10 „ 5.28	10 „ 6.26	10 Full Moon 0.43 „
19 „ 5.43	19 „ 6. 5	17 Last Quarter 10.53 morning.
28 „ 5.59	28 „ 5.44	25 New Moon 3.19 evening.

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
Tu 1	5.14	5.36			0.30	0. 1	6	10.52 AM	9. 0 PM
W 2	5.49	6.11			0. 2	0.19	7	0. 6 PM	9.22
Th 3	6.33	6.54			0.44	1. 7	☽	1.21	9.51
F 4	7.26	7.50			1.32	2. 7	9	2.36	10.28
S 5	8.33	9.10			2.50	3.32	10	3.46	11.18
𝕾 6	10. 6	10.40		3.24	4.19	5.46	11	4.46	—
M 7	11.29	11.52	4. 6	4.33	6 35	7.18	12	5.34	0.24 AM
Tu 8	—	0.30	5.17	5.27	7.58	8.24	13	6.11	1 44
W 9	0 46	1.21	5.58	6. 9	8.51	9.18	14	6.40	3.11
Th 10	1.35	2. 9	6.39	6.50	9.40	10.10	○	7. 3	4.42
F 11	2.21	2.52	7.19	7.32	10.22	10.58	16	7.24	6.11
S 12	3. 5	3.37	8. 1	8.18	11. 4	11.44	17	7.43	7.38
𝕾 13	3.47	4.16	8 43	9. 5	11.43	—	18	8. 3	9. 3
M 14	4.34	5. 4	9.28	9.56	0.24	0.14	19	8.25	10.25
Tu 15	5.18	5.46	10.20	10.47	0 54	0.48	20	8.50	11.44
W 16	6. 9	6.31	11 15	11.45	1.27	1.35	21	9.21	0.59 PM
Th 17	6.55	7.17		0.19	2. 9	2.29	☾	9.59	2. 7
F 18	7.55	8.27			2.16	2.47	23	10.46	3. 5
S 19	9.15	9.58			3.35	4.16	24	11.41	3.53
𝕾 20	10.54	11.22			5.11	5.51	25	–	4.31
M 21	—	0. 8			6.37	7. 2	26	0 43 AM	5. 1
Tu 22	0.24	0.58			7 38	7.50	27	1.49	5.25
W 23	1. 8	1.35			8.13	8.27	28	2.57	5.45
Th 24	1.46	2. 7	6.53	6 58	9.25	9.43	29	4. 5	6. 2
F 25	2.14	2.38	7.19	7·23	9.53	10.15	●	5.13	6.18
S 26	2.43	3. 5	7.43	7·48	10.18	10.44	1	6 22	6.33
𝕾 27	3.10	3.34	8. 9	8·21	10.42	11.15	2	7.32	6.48
M 28	3.40	4. 3	8.42	9.59	11. 8	11.41	3	8.44	7. 5
Tu 29	4.17	4.35	9.19	9.43	11.25	11.59	4	9.57	7.26
W 30	4.46	5. 9			11. 7	11.34	5	11.12	7.51

10th Month. OCTOBER. 31 Days.

Sun rises.			Sun sets.			The Moon's changes.		
1	at	6. 4	1	at	5.37	3	First Quarter	6.33 morning.
10	„	6.19	10	„	5.16	9	Full Moon	9.23 evening.
19	„	6.35	19	„	4.56	17	Last Quarter	3.55 morning.
28	„	6.52	28	„	4.37	25	New Moon	7. 6 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
Th 1	5.27	5.42			11.50	--	6	0.26PM	8.24PM
F 2	6. 8	6.24			0.21	0.43	7	1 37	9. 9
S 3	7. 0	7.26			1.17	1.45	☽	2.39	10. 7
𝕾 4	8. 9	8.51			2.37	3.16	9	3.30	11.20
M 5	9.49	10.28		3. 6	4.12	5.36	10	4. 9	—
Tu 6	11.18	11.39	4. 1	4.15	6.34	7. 7	11	4.40	0.42AM
W 7	—	0.19	5. 5	5. 8	7 47	8.14	12	5. 4	2. 9
Th 8	0.32	1. 4	5.48	5.51	8.39	9. 8	13	5.25	3.37
F 9	1.19	1.47	6.23	6.31	9.20	9.54	○	5.44	5. 5
S 10	2. 4	2.27	6.58	7.14	9 59	10.39	15	6. 3	6.31
𝕾 11	2.41	3. 7	7.37	7.57	10.38	11.17	16	6.24	7.56
M 12	3.24	3.48	8.18	8.40	11.13	11.52	17	6.48	9.19
Tu 13	4.10	4.31	9. 0	9 28	11.45	—	18	7.17	10.38
W 14	4.54	5.13	9.50	10.23	0.21	0.28	19	7 52	11.52
Th 15	5.38	5.57	10.47	11.25	1. 1	1 16	20	8 37	0.57PM
F 16	6.26	6.44	11 48	—	1 50	2.11	21	9.30	1.50
S 17	7.17	7.44	0.27	0.50	2.43	3. 6	☾	10.31	2.32
𝕾 18	8.29	9.11			2.57	3.23	23	11.36	3. 5
M 19	10. 3	10.38			4.26	5. 3	24	—	3.31
Tu 20	11.30	11.52			5.54	6.17	25	0.43AM	3.52
W 21	—	0.28			6.58	7.16	26	1.52	4. 9
Th 22	0.38	1. 8			7.45	7 59	27	3. 1	4.25
F 23	1.14	1.39			8.16	8.26	28	4.10	4.40
S 24	1.49	2. 9	7. 0	7. 0	9.24	9.44	29	5.20	4.55
𝕾 25	2.16	2.34	7.20	7.24	9.46	10.14	●	6.32	5.11
M 26	2.45	3. 2	7.46	7.57	10.11	10.41	1	7.46	5.30
Tu 27	3.15	3.32	8.20	8.37	10.36	11.10	2	9. 2	5.54
W 28	3.45	4. 4	8.53	9.10	11. 5	11.45	3	10.18	6.24
Th 29	4.27	4.47	9.28	9.50	11.42	—	4	11.31	7. 5
F 30	5. 0	5.25			0. 9	0. 1	5	0.36PM	7.59
S 31	5.45	6.12			0.14	0.38	6	1.30	9. 6

11th Month. NOVEMBER. 30 Days.

Sun rises.			Sun sets.			The Moon's changes.		
1	at	7. 0	1	at	4.29	1	First Quarter	2.35 evening.
10	„	7.16	10	„	4.13	8	Full Moon	8.18 morning.
19	„	7.32	19	„	4. 0	16	Last Quarter	0. 1 „
28	„	7.47	28	„	3.50	23	New Moon	10.13 evening.
						30	First Quarter	10. 4 „

First tide from 0 A.M. — Second tide from 0 P.M.

Days.		Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
		1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
S	1	6.41	7.12		0. 7	1.24	2.31	☽	2.12 PM	10.24 PM
M	2	7.54	8.32			2.32	2.58	8	2.43	11.47
Tu	3	9.28	10 8			4. 3	4.46	9	3. 8	—
W	4	11. 1	11.28		4. 6	5.43	6.48	10	3.29	1.12 AM
Th	5	—	0. 2	4.48	4 53	7.24	7.57	11	3.48	2 38
F	6	0.15	0.42	5.30	5.35	8.14	8.45	12	4. 6	4. 2
S	7	0.58	1.24	6. 6	6.14	8.57	9.30	13	4.25	5.26
S	8	1.42	2. 7	6.40	6.52	9.36	10.10	🌕	4.47	6.50
M	9	2.26	2.46	7.17	7.34	10 11	10.45	15	5.13	8.12
Tu	10	3. 7	3.25	7.58	8.18	10.50	11.17	16	5.45	9.30
W	11	3.50	4. 5	8.43	9. 5	11.32	11.55	17	6.26	10.41
Th	12	4.34	4.44	9.29	9.54	—	0.13	18	7.16	11.42
F	13	5.19	5.25	10.17	10.54	0.33	0 57	19	8.15	0.30 PM
S	14	5.59	6.13	11.12		1.24	1.46	20	9.20	1. 7
S	15	6.48	7.10			1 35	1.53	21	10.27	1.35
M	16	7.47	8 18			2.38	2.52	☾	11.35	1.58
Tu	17	8.59	9.35			3.35	3.55	23	—	2 16
W	18	10.19	10.50			4.48	5.14	24	0.44 AM	2.32
Th	19	11.33	11.54			6. 0	6.23	25	1.53	2 47
F	20	—	0.20			6.56	7.12	26	3. 3	3. 2
S	21	0.32	0.57			7.35	7.47	27	4.14	3.17
S	22	1.11	1.33	6.37	6.43	8.41	9. 8	28	5.28	3.34
M	23	1.44	2. 3	7. 2	7. 6	9.10	9.40	🌑	6.44	3.56
Tu	24	2.19	2.35	7.24	7.34	9.40	10 14	1	8. 2	4 24
W	25	2.55	3.10	7.53	8. 3	10.25	10.51	2	9.19	5. 1
Th	26	3.32	3.44	8 26	8.40	11.11	11.32	3	10.29	5 52
F	27	4.11	4.22	9. 6	9.26	11.53	—	4	11.28	6.56
S	28	4.52	5. 6	9.50	10.22	0. 7	0.38	5	0.14 PM	8 12
S	29	5.40	5 56	10.46	11.31	1. 1	1.31	6	0.49	9.34
M	30	6.34	7. 1	11.53		2. 6	2 34	☽	1.15	10.58

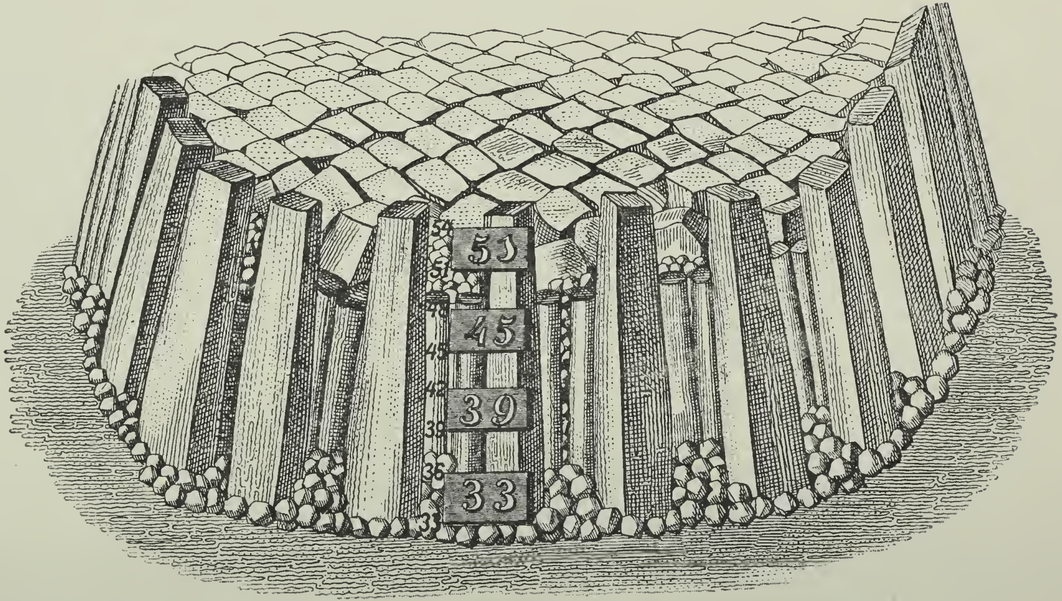
12th Month. DECEMBER. 31 Days.

Sun rises.	Sun sets.	The Moon's changes.
1 at 7.51	1 at 3.48	7 Full Moon 10.4 evening.
10 „ 8. 3	10 „ 3.44	15 Last Quarter 9.42 „
19 „ 8.10	19 „ 3.44	23 New Moon 0. 9 „
28 „ 8.14	28 „ 3.50	30 First Quarter 6. 0 morning.

First tide from 0 A.M. — Second tide from 0 P.M.

Days.	Highwater.		Preceding Lowwater.		Lowwater.		The Moon.		
	1st tide	2nd tide	1st tide	2nd tide	1st tide	2nd tide	Age.	Moon rises.	Moon sets.
Tu 1	7.43	8.17			2.30	2.54	8	1.36PM	—
W 2	9. 1	9.39			3.55	4.57	9	1.55	0.21AM
Th 3	10.23	10.54		3.44	5.20	6.31	10	2.12	1.44
F 4	11.30	11.53	4.25	4.37	7. 0	7.35	11	2.30	3. 6
S 5	—	0.19	5.14	5.25	7.50	8.20	12	2.50	4.27
S 6	0 41	1. 8	5.55	6. 5	8.35	8.55	13	3.13	5.48
M 7	1.31	1.51	6.32	6.48	9.16	9.37	🌕	3.41	7. 7
Tu 8	2.19	2.34	7.11	7.28	9.58	10.16	15	4.18	8.22
W 9	3. 4	3.17	7.52	8. 9	10.43	10.55	16	5. 4	9.28
Th 10	3.43	3.50	8.34	8.53	11.26	11.36	17	5.59	10.22
F 11	4.17	4.27	9.16	9.38	—	0. 5	18	7. 2	11. 5
S 12	4.54	5. 8	9.58	10.28	0.16	0.43	19	8.10	11.37
S 13	5.37	5.49			0.58	0.29	20	9.19	0. 1PM
M 14	6.21	6.36			1. 0	1.20	21	10.28	0.21
Tu 15	7.10	7.30			1.51	2. 4	☾	11.36	0.38
W 16	8. 3	8.30			2.32	2 46	23	—	0.53
Th 17	9. 7	9.39			3.33	4. 1	24	0.44AM	1. 7
F 18	10.21	10.52			4.49	5.17	25	1.53	1.22
S 19	11.27	11.51			5.54	6.12	26	3. 5	1.38
S 20	—	0.17			6.47	7. 2	27	4.20	1.58
M 21	0.35	0.55			7.32	7.48	28	5.38	2.22
Tu 22	1.13	1.32	6.23	6.32	8.54	9.20	29	6.56	2.55
W 23	1.56	2.10	6.53	7. 6	9.40	10. 4	🌑	8.11	3.40
Th 24	2.41	2.49	7.27	7.42	10.28	10.47	1	9.17	4.40
F 25	3.19	3.32	8.11	8.26	11.21	11.33	2	10.10	5.54
S 26	4. 2	4.14	8.54	9.13	—	0. 9	3	10.50	7.18
S 27	4.43	5. 3	9.41	10.13	0.21	0.50	4	11.20	8.44
M 28	5.38	5.53	10.36	11.17	1. 7	1.37	5	11.43	10. 9
Tu 29	6.28	6.48	11.34	—	2. 3	2.27	6	0. 2PM	11.32
W 30	7.27	7.51	0.21	0.36	2.55	3.18	☽	0.20	—
Th 31	8.27	9. 2			3.10	3.35	8	0.37	0.53AM

December 22nd and 23d. ANNULAR ECLIPSE of the SUN (Not visible in Holland.)



Self-Indicating Signal-post at the end of Northern pier, New-Waterway.
Placed by DIRKZWAGER at the request of Shipbrokers and Captains,
with permission of the Naval and Waterstaat-Department.
(Guide 1875)

The New-Waterway from ROTTERDAM to SEA 1847 - 1897.

„Our coast must be made accessible to all foreign traffic."

The Prime Minister THORBECKE *in the Dutch House of Parliament 13 December 1862.*

The traffic through the Voornsche Kanaal amounted in 1847 to 3043 sea-going-vessels, measuring 1,483,357 M³. In 1896 12484 steamers and ships measuring 28,656,744 M³ passed through the New-Waterway. A difference which speaks volumes.

In 1857 the way from sea went to Rotterdam via Brouwershaven or Hellevoetsluis only — as a rule, after discharging part of cargo in lighters, by way of the Voornsche Kanaal made in 1827 - 1829, whilst only smaller craft went and came by way of Brielle. On Brielle bar, however, only 34 d.M. was found at high-water.

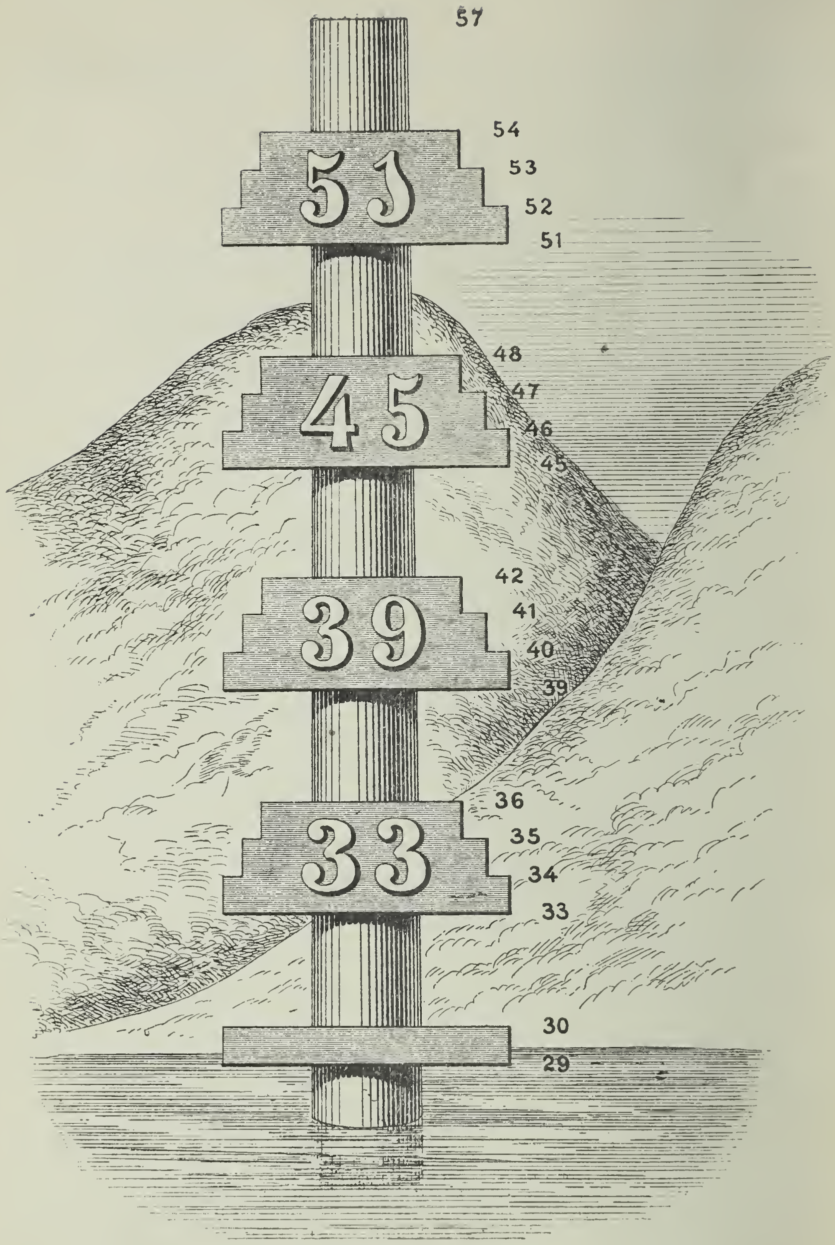
The depth at high water in Goerêe-Entrance 57 d.M., in Hellegat 52 d.M., ruled the draught of vessels, while their dimensions were limited by those of the Voornsche Kanaal, up to a length of 71 Meters and only after 1876, when by special allowance with favorable weather and at the top of high-water, ships passed the sluices up to 110 Meters' length and 13,7 Meters' breadth.

The way from Sea to Rotterdam took on an average, under favorable circumstances, at least 18 hours, but even in 1880 it was no rare occurrence that steamers drawing 53 to 55 d.M., required 5 to 8 days to get from Rotterdam to Sea.

In consequence of the pressure for improvement specially with the trade to America in view, on 5 November 1857 the Minister of the Interior appointed a Committee, consisting of H. F. FYNJE, President, F. W. CONRAD, D. J. STORM BUYSING, J. A. BEIJERINK, Jhr. J. ORTT VAN SCHONAUWEN and P. CALAND, the latter as Secretary, to investigate the plans for the improvement of the Waterway from Rotterdam to Sea. This Committee decided on a depth of 70 d.M., at high-water.

On 25th January 1858 the engineer P. CALAND proposed an open fairway, the entrance of which was to be protected by piers built out till a certain depth was reached, and made in such a way that the flood should enter, in its full force and that to keep the proposed depth, that same volume of water, increased by the water from the upper rivers, should get to sea during the ebbtide. i. e. that the entrance should be constantly deepened and widened by both ebb and flows.

At the same time the entrance and the river were to be normal-



Self-Indicating Signal-post at entrance of New-Waterway.
Placed by DIRKZWAGER at the request of Shipbrokers and Captains, with permission of the Naval and Waterstaat-Department.
(Guide 1875)

ised. The width from Sea to be proportionally diminished as the river flows inward.

In 1860 Mr. CALAND worked out these principles, on scientific grounds, in his standard work „On Flood and Ebb on the Lower Rivers".

Although on this principle, the work had to be carried out under very unfavorable circumstances, i. e. a low sandy coast, in the proximity of sand-banks near the mouths of the rivers and entrances to the south, a trifling difference between rise and fall of water, it was accomplished, one of the most astonishing results of modern engineering, according to his idea, namely: an open fairway to sea with no bars at the entrance. The Netherlands now reap the fruits of this principle, it being amongst all the entrances of North West Europe the shortest and most accessible even during severe winters; the hindrance by ice being trifling, while no clearing of the river by icebreakers or otherwise is necessary.

The first idea of making a new fairway through the Hoek van Holland came from MELCHIOR BOLSTRA in 1739. The law of 24th January 1863, State Calendar of Laws No. 4, which constituted in the first place the making of a channel through Holland between Amsterdam and the North Sea, ordered in the second place the improvement of the Waterway from Rotterdam to Sea, according to Mr. CALAND's plan on the following general principles.

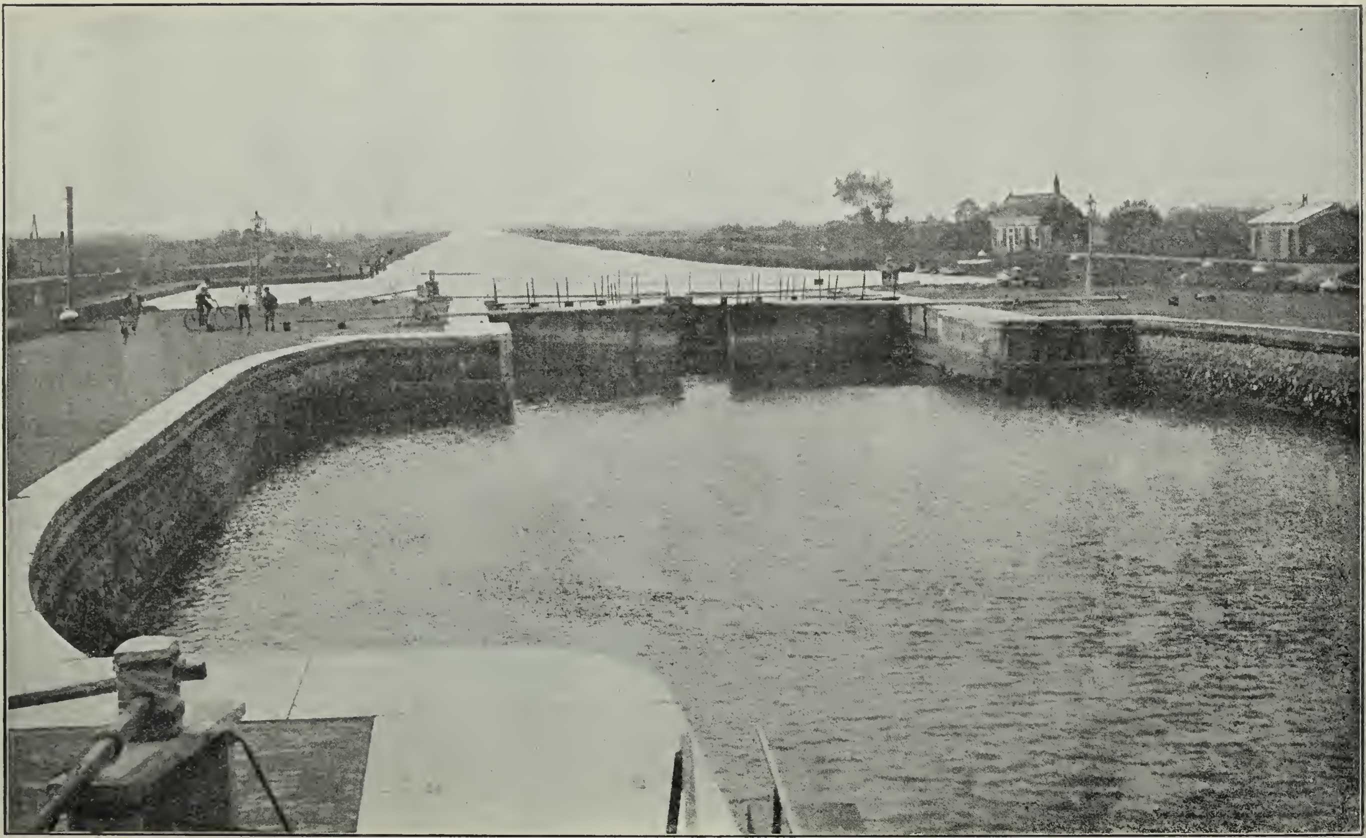
The river to be widened at Krimpen to 225 M., and further lower up to 450 M. at Vlaardingen and through the river Maas and the Hoek van Holland up to 900 M. at the entrance, with a sufficient depth; this entrance to be made by dykes, in connection with two piers or moles, to be carried out to sea up to a sufficient depth.

The piers were to be brought out to a line of depth of 72 d.M., under average high-water,

The total expenses of this fairway from Rotterdam to sea were calculated at *f* 6,300,000,—, the work to be completed in 6 years. A beginning was made in August 1863. H. R. H. the Prince of Orange turned the first spade of sand on the 31st October 1866 at Hoek van Holland. The following memorial was drawn up: „On this day, at noon, H. R. H. „the Prince of Orange „turned the first spade of sand at Hoek van Holland for the improvement „of the Waterway from Rotterdam to Sea" and was signed by

PRINS VAN ORANJE.
HEEMSKERK.
VAN ZUYLEN VAN NIEVELT.
R. SCHIMMELPENNINCK.
PELS RYCKEN.
J. LOUDON.
MACKAY VAN OPHEMERT.

VAN VOLLENHOVEN.
VAN DEN BERGH VAN HEEMSTEDE
RENGERS VAN WARKENHUIZEN.
CONRAD.
P. CALAND.
J. F. BOOGAARD.
VAN DER LINDEN.



SLUICES at NIEUWESLUIS. Formerly the way to and from Sea via Brouwershaven or Hellevoetsluis. (*See page 47.*)

On the 26th November 1868 the entrance was opened. In September 1870 the first 2 crafts, fishing-boats, passed through it, followed on 10th July 1871 by the first fishing-smacks, whilst the s.s. RICHARD YOUNG, belonging to the Rotterdam-Harwich line, with a depth of 30 d.M., was the first steamer to pass the New-Waterway on 9th March 1872, whilst the buoys were laid on 19th March 1872.

The dues on the Voornsche Kanaal amounted to *f* 104,450,— in 1873 with an extra lighterage of *f* 184,450— these same dues in 1885 produced only *f* 79,— in consequence of the traffic passing through the New-Waterway.

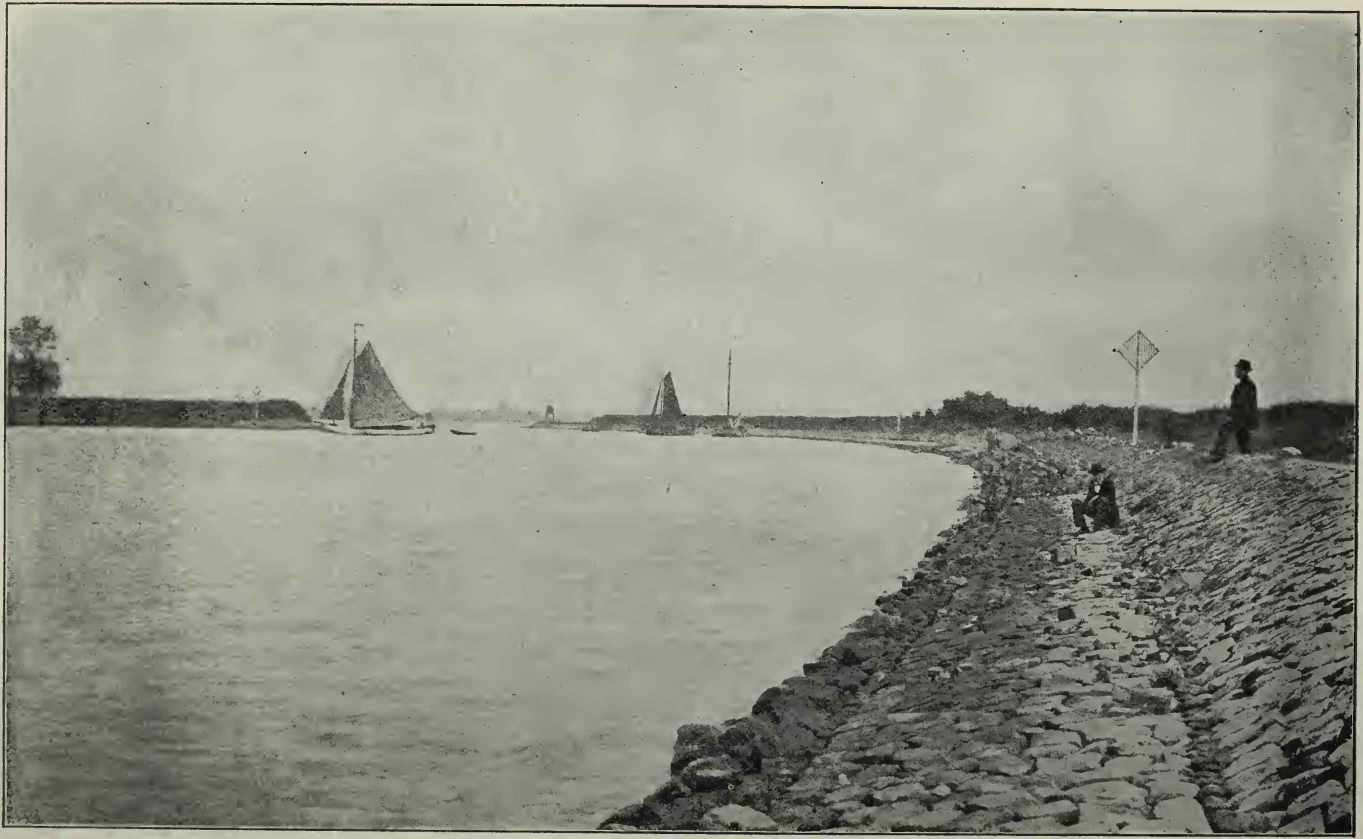
The original intention of MR. CALAND in 1858, on which he based his estimate of costs and time, was to dig a channel through the dunes at Hoek van Holland to a length of 4½ kilometers, a width of 50 meters and a depth of 30 d.M. below low-water, which channel he supposed would be widened and deepened by both ebb and flood. This he thought would likewise be the case with the river from Hoek van Holland to Rotterdam, for the improvement of which *f* 1,000,000,— had been the estimated cost. In fact he thought nature would play the greatest part.

After the piers had been brought out to a depth of 40 d.M. below low-water from 1863 to 1868, in November 1868, when the Channel was connected at Hoek van Holland with the sea, an enormous quantity of sand was ebbed out by this Channel, causing bars in and before the entrance, which it was found impossible to remove properly although the piers were repeatedly lengthened, (the Northern pier till 1874, the Southern one till 1877) upto a depth on the coast of 80 d.M. under low-water. In 1868—1880 alone, not less than 7¼ million M^3 of sand passed through this cutting out to sea. Of this enormous quantity 3¼ millions of M^3 were removed by floodtides but the remaining 4 millions constituted an enormous bar at the entrance checking the traffic and hindering the deepening by floodtide, the soul and body of the principle.

The maximum of this sand and silt deposit before the entrance of the Waterway was reached in the afterpart of 1879 and after that gradually decreased. At the end of 1877 *f* 12½ million had been laid out whilst *f* 3,400,000, — were still estimated to make the required width of 400 M., the depth at low-water was 34 dM. in a channel 100 meters wide, whilst the depth in the line of the leading-lights was 36½ d.M.

It now became evident that although the principle of deepening through both ebb and flood had been proved to be correct, it would be impossible for it to work properly, if no consideration were taken of the river and entrance.

To enable Parliament to form a just opinion of the further



View of Botlek after leaving the sluices at Nieuwesluis on the Way to Rotterdam. *(See page 53.)*

improvement before acceding to further considerable outlays, a State Commission was appointed. The members being Mess^rs J. D. FRANSEN VAN DE PUTTE, President, Jhr G. F. VAN TETS, Mr. P. L. F. BLUSSÉ, H. S. J. ROSE, J. A. A. WALDORP, J. F. W. CONRAD, Dr. E. F. VAN DISSEL, P. J. BUYSKES, P. ROODZANT, W. VAN DER HOEVEN, and W. TH. C. VAN DOORN as Secretary. State Calendar of laws December 4 1877, No. 1.

On the 1st of August 1878 Mr. W. F. LEEMANS was appointed engineer solely for the improvement of the Waterway from Sea to Rotterdam having instructions to work out the plans of this committee.

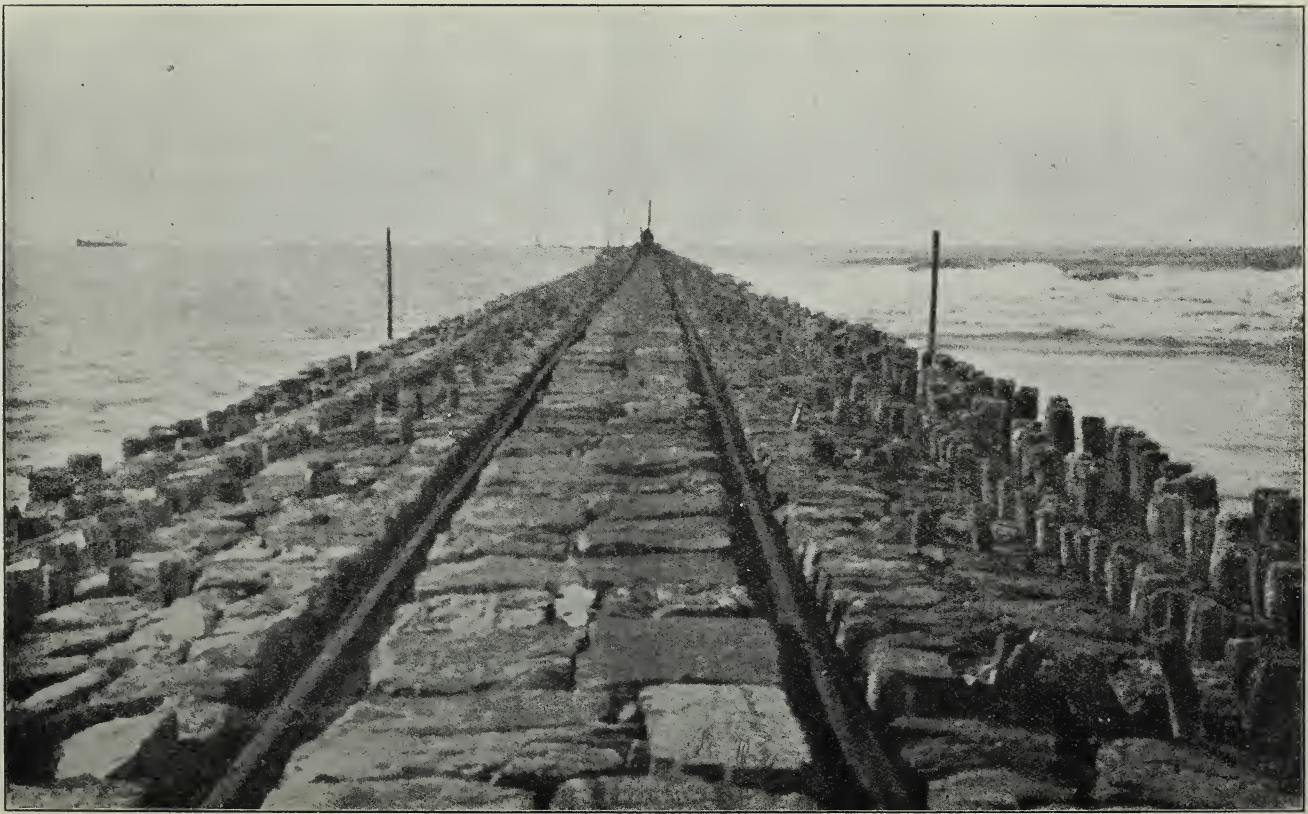
On 10th July and 6th December 1880 a final report of the State Commission was issued and the principle of an open river maintained. The width for the whole river, to be excavated by manual labor and dredging only was fixed for Krimpen at 250 M. thence regularly widening to 340 M. at Rotterdam, at Vlaardingen 450 M., Maassluis 530 M., and 685 M. width at the end of the northern pier. It was further decided that all connection between the Rotterdam Waterway and the Oude Maas and Botlek should cease, that the piers at the Hoek van Holland should be built higher up and at the same time be lengthened till a depth of 90 d.M. was attained at low-water.

By judicious alterations in the „Noordgeul" the connection between Rotterdam Waterway and Oude Maas was not finally closed.

When the natural removal of sand was properly checked it was found that the piers need not be lengthened or built higher up. The total amount for the improvement as calculated by the State Commission came to *f* 30,000,000 of which *f* 11,000,000 was destined for bringing about the disconnection of the two aforesaid rivers and alterations of the piers. Pending the proposals of the State Commission no work was done. By the law of 26th June 1881, State Calendar of Laws, No. 140, the improvement on the principle of normalising the river was again taken in hand and continued till its completion in 1895. The expenses for the improvement since 1881 have been borne by the Commune of Rotterdam, according to Resolution of 28th April 1881, to the amount of 10 %.

The Rotterdam trade from the beginning saw no solution in the improvement of the Waterway from Rotterdam to Sea but by an open channel according to the original plan of Mr. CALAND and when by temporary mishaps great anxiety prevailed all over Holland as to the success Rotterdam traders never lost their belief in the final success of the great promotor.

By this clear insight Holland has fared well, because it was only possible by so doing to work out the plan, so strongly opposed



View of NORTHERN-PIER from the land-side. *(See page 55.)*

outside Rotterdam, an opposition carried on vehemently for a period of 22 years, totally ignoring CALAND's principle.

Several plans with sluices were proposed, even by eminent engineers, but the Rotterdam trade never for a moment listened to the alluring voice of the tempters whereby the whole system would have been endangered and fully adhered even during the stoppage of the work to the original idea; fully convinced that all improvements without an open river would prove inadequate for them to keep up the competition of the present time by big ships.

From 1881 till 1896 *f* 20,800,000 were spent on the New Waterway, making the total *f* 36,300,000. Between Krimpen and the sea on both sides of the river not less than 37.8 kilometers of dams have been made. The Northern pier at Hoek van Holland has a length of 2 kilometers, the Southern pier of 2,3 kilometers, whilst the South lower-mole has the same length. The 4 Hectares of ground in the Channel, along its sides are covered with stones, whilst a dam between Rozenburg and the old entrance covers a length of 0.86 kilometres, a channel was made there through Rozenburg, with a sluice, of a length of 1.93 kilometer to bring the sand removed by the hoppers into the river near Brielle.

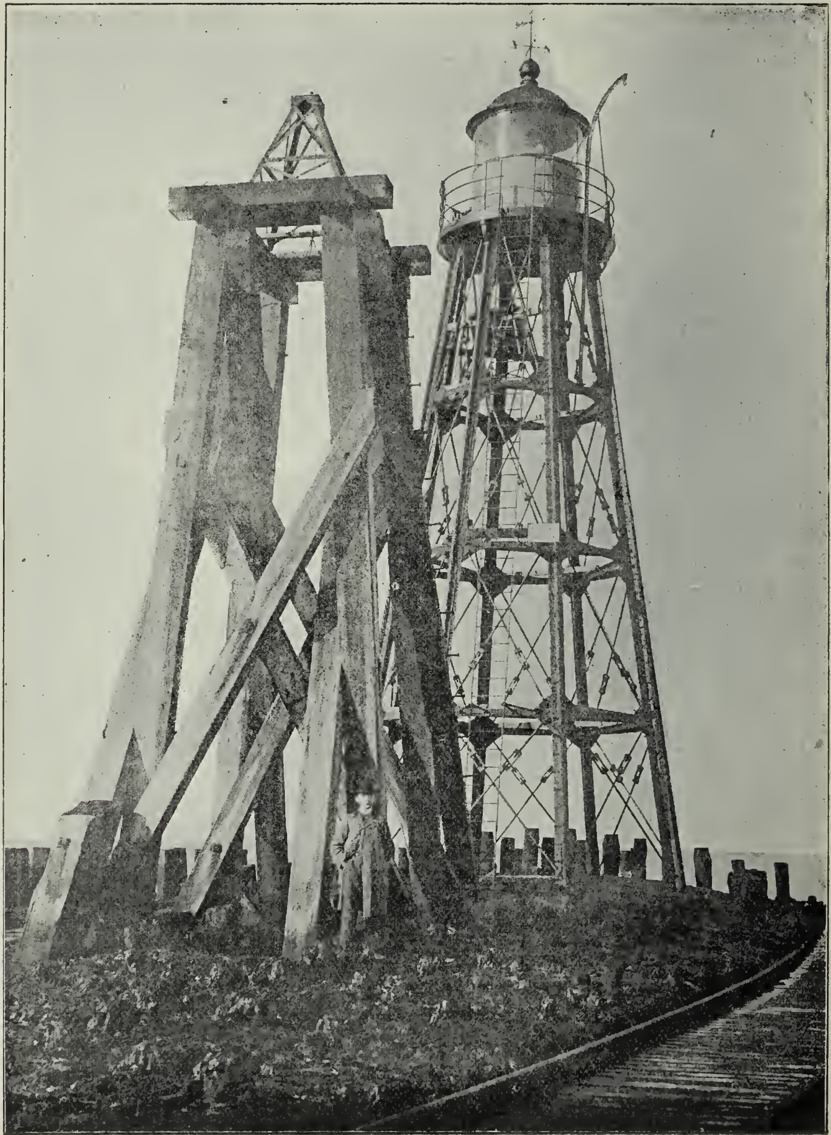
Altogether up to 1880 from Krimpen to sea 14 million M^3 of sand have been removed and from 1881 till the end of 1896 not less than 42 million M^3., making a total of 56 million M^3. of sand. (*)

Extremely useful for the removing of sand and mud did the sandsuckers prove, used since 1878 at Hoek van Holland, invented by Mess^{rs} A. Vermaas, P. A. Bos and A. Volker which invention was brought to its full value by the very practical craft built by Mess^{rs} P. & K. Smit at Kinderdijk and Krimpen and Mess^{rs} L. Smit & Zoon at Kinderdijk which were made so perfect that sandsucking became possible even with a swell on the bar of 9 d.M. It is due principally to these sandsuckers that the accomplishment of the work was possible in such a short time.

The yearly expenses for repairs to piers, sandsucking, &c., come to *f* 450.000.— which will be the effective amount for years to come.

The length of the Waterway from the Maasbridge at Rotterdam to sea is 33 kilometers; the difference between high and low-water is on an average at Hoek van Holland 17 and at Rotterdam 13 d.M.; in 1880 a depth of 82 d.M. was considered obtainable at Hoek van Holland and at Rotterdam 79 d.M. as the maximum depth. Far greater depth has been obtained. In 1897 at the entrance 104 d.M. was found 100 d M. between the piers, 82 d.M. from 6½ kilometers below up to 1.5 kilometer above Maassluis, 86 d.M. from there to Vlaardingen and between this harbour and Rotterdam 90 d.M.

(*) Till the end of 1899 not less than 48.1 million M^3 making a total of 62 1 million M^3 of sand.

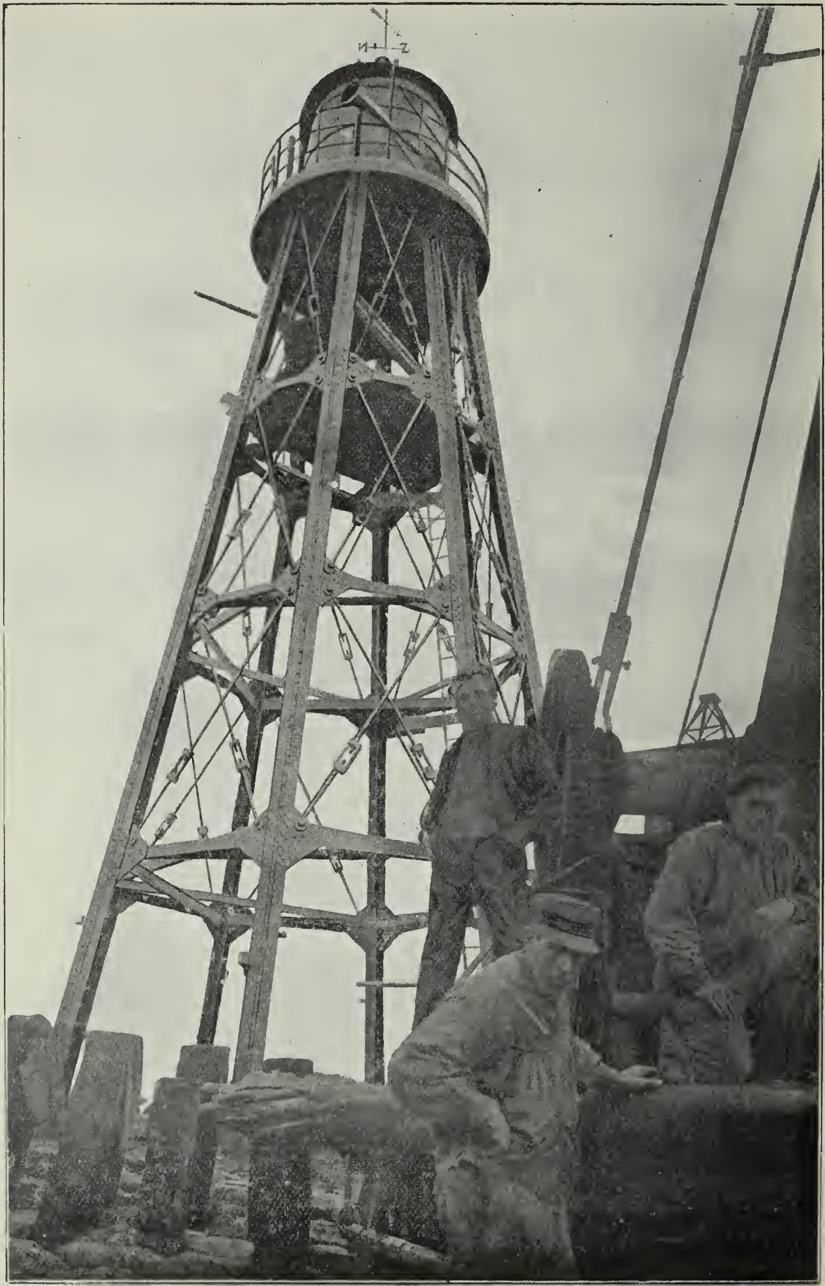


NORTHERN-PIER

showing entrance of the New-Waterway.

The following table, giving the lowest and the highest mark, as signalled by the Admirality at Hoek van Holland, at low-water, showing the constant increase of same.

During:	LOWEST Signal at Low-water during the year. 7 dM.—AP. 9.4 dM.—NAP.	HIGHEST Signal at Low-water during the year. 7 dM.—AP. 9.4 d.M.—NAP	REMARKS.
1872	—	—	In the line of the leading-lights of the Noordgat at the entrance.
1873	21	26	
1874	26	32	
1875	33	39	
1876	30	38	
1877	30	37	
1878	25	39	
1879	34	44	
1880	26	32	
1881	30	31	Depth at the black buoys' side.
1882	30	33	Depth in the line of the leading-lights.
1882	37	40	In Westgat with channel 150 M wide.
1883	37	47	„ „ „ „ 100 M „
1884	40	53	
1885	55	57	„ „ „ „ 150 M „
1886	55	64	„ „ „ „ 150 M „
1887	59	65	In the channel 100 M. wide.
1888	58	62	
1889	62	70	
1890	67	73	
1891	64	76	
1892	62	77	
1893	76	81	
1894	82	85	„ „ „ 110 M. „
1895	77	82	
1896	80	84	
1897	77	82	
1898	81	85	
1899	76	86	
1900	84	87	
1901	84	87	
1902	80	87	
1903	80	87	
1904	85	88	
1905	85	88	
1906	83	88	



View of the Beacon on the Northern-Pier showing FOG-HORN.

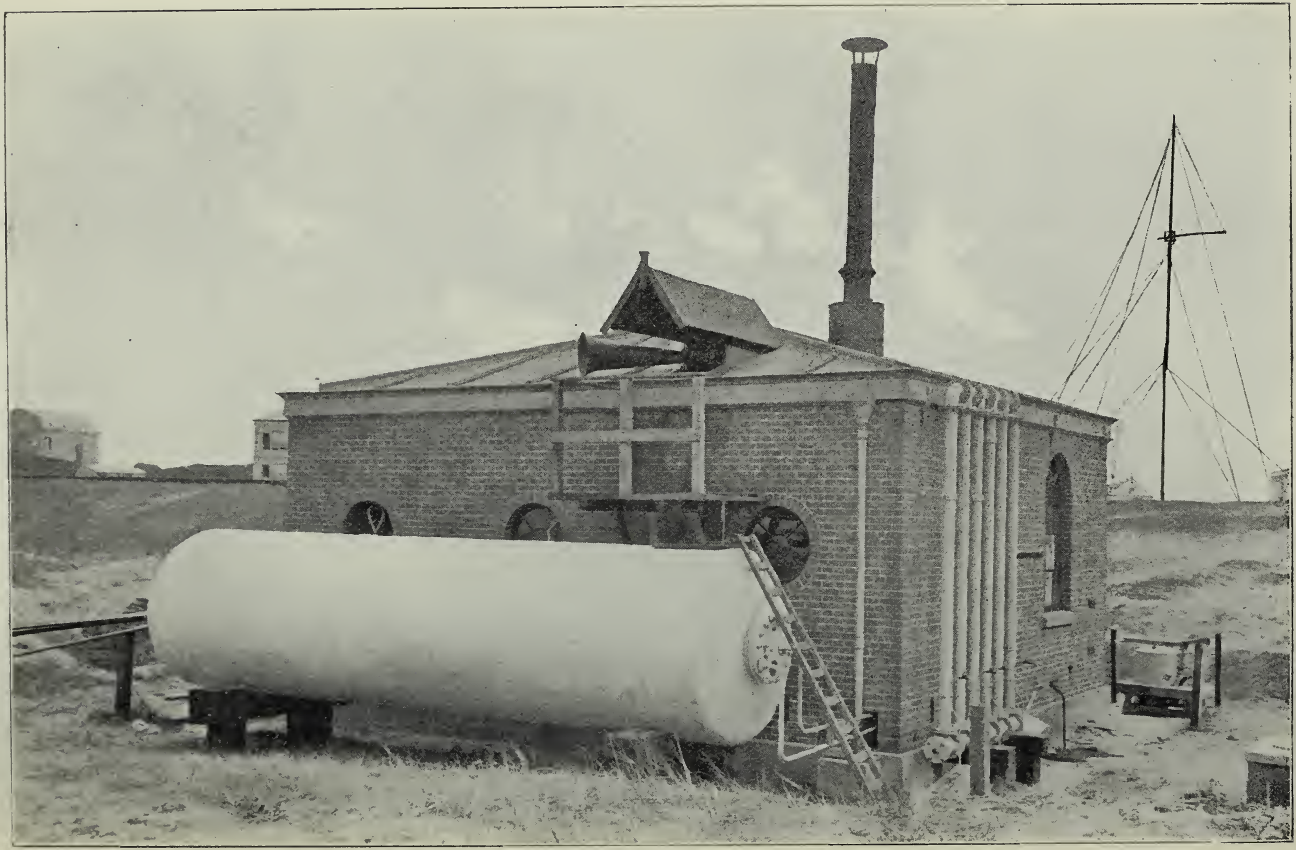
As a further proof can be stated that, with a width of over 200 Meters, was signalled at highwater between the piers in 1884 67 d.M.; in 1885 70 d.M.; in 1886 73 d.M.; in 1887 76 d.M.; in 1888 79 d.M.; in 1889 82 d.M.; in 1890 85 d.M.; in 1891 88 d.M.; in 1892 91 d.M.; in 1893 94 d.M.; in 1894 97½ d.M.

The latter is now the constant depth.

The whole state now profits by the daily increasing number of large ships from all ports of the world arriving and leaving Rotterdam. The transit trade with Germany requires and fosters an enormous traffic along the Rhine, whilst also the railways largely profit by this transit. For the export of Dutch agricultural produce and cattle and the products of Dutch factories the harbour of Rotterdam offers the best and greatest advantages.

The following table shows the increase of tonnage since 1872.

Year:	Steam- and Sailing-vessels Fishingsmacks excluded.	Measured M^3	Vessels drawing 55 dM. and more.
1872	416	—	—
1873	4,471	3,738,680	—
1874	5,786	4,986,747	—
1875	7,127	6,602,465	—
1876	7,367	6,909,485	—
1877	6,852	7,162,887	—
1878	6,850	7,491,882	—
1879	6,946	8,314,012	—
1880	7,008	8,382,969	—
1881	7,026	8,350,786	—
1882	7,677	9,943,296	65
1883	7,788	10,829,581	285
1884	8,177	12,401,375	543
1885	7,915	12,366,227	532
1886	7,992	12,777,469	702
1887	8,819	14,528,943	839
1888	9,488	15,715,512	892
1889	9,543	16,283,726	1017
1890	9,637	17,078,007	1170
1891	9,458	17,535,567	1245
1892	9,191	18,160,769	1207
1893	9,628	20,432,165	1478
1894	10,731	23,947,859	1713
1895	10,922	24,171,138	1759
1896	12,484	28,656,774	2261
1897	13,046	31,050,607	2357
1898	13,590	33,188,079	2617
1899	14,446	35,955,203	2653
1900	15,202	36,348,613	2688
1901	14,411	36,413,379	2768
1902	14,169	37,109,769	2846
1903	15,802	43,361,768	3431
1904	16,284	44,559,793	3461
1905	17,937	49,036,539	3956
1906	18,818	53,396,417	4203



FOG-SIGNAL at Hoek van Holland.

Of the vessels entered through the New Waterway in 1896 243 had a depth of 67—70 d.M.; 84 of 70—73 d.M; 33 of 73—76 d.M.; 9 of 76—79 d.M.; 2 of over 79 d.M. (*)

In 1896 the arrivals were:

	Sea vessels	measuring:	
at Antwerp	4,951	5,854,142	Reg. nett tons
at Rotterdam 5974 . . .	7,824	4,974,116	measuring 6,944,116 Reg. nett tons
at Amsterdam 1850 . . .		1,970,000	
at Hamburg	10,477	6,445,000	„ „ „

The Holland-America Line now run the following twin-screw steamers in its New-York service, viz.,

T.S.S. Statendam, length 162 Meters, breadth 18.14 Meters, depth 13.26 Meters, 6700 Horsepower, 11290 Tons (deadweight), depth with full cargo 8.82 Meters,

T.S.S. Potsdam, Rijndam and Noordam, length 172.3 Meters, breadth 18.91 Meters, depth 14.03 Meters, 7500 Horsepower, 12400 Tons (deadweight), depth with full cargo 9.32 Meters.

T.S.S. Nieuw Amsterdam, length 189.1 Meters, breadth 20.89 Meters, depth 14.64 Meters, 10.000 Horsepower, 16.500 Tons (deadweight), depth with full cargo 10.44 Meters; while a new T.S.S. Rotterdam is building of 25000 Tons

The same Company also run a regular line of freight-steamers to Philadelphia and Newport News, Va. with specially built steamers, named Soestdijk, Amsteldijk and Sloterdijk, length 129 Meters, breadth 16 Meters, depth 12.5 Meters, 2500 Horsepower, 8100 Tons (deadweight), depth with full cargo 8.40 Meters.

At the end of the speech held by the great Statesman, whose words appear at the head of this article, at the latter part of the discussion in the Dutch Upper-House on 23 January 1863 regarding the proposals for the improvement of the Amsterdam and Rotterdam Waterways he uttered the following remarkable words:

„In the course of this discussion my opinion : that I considered „these improvements a risky work, has been several times „repeated. I say so now. It is no recommendation, but neither

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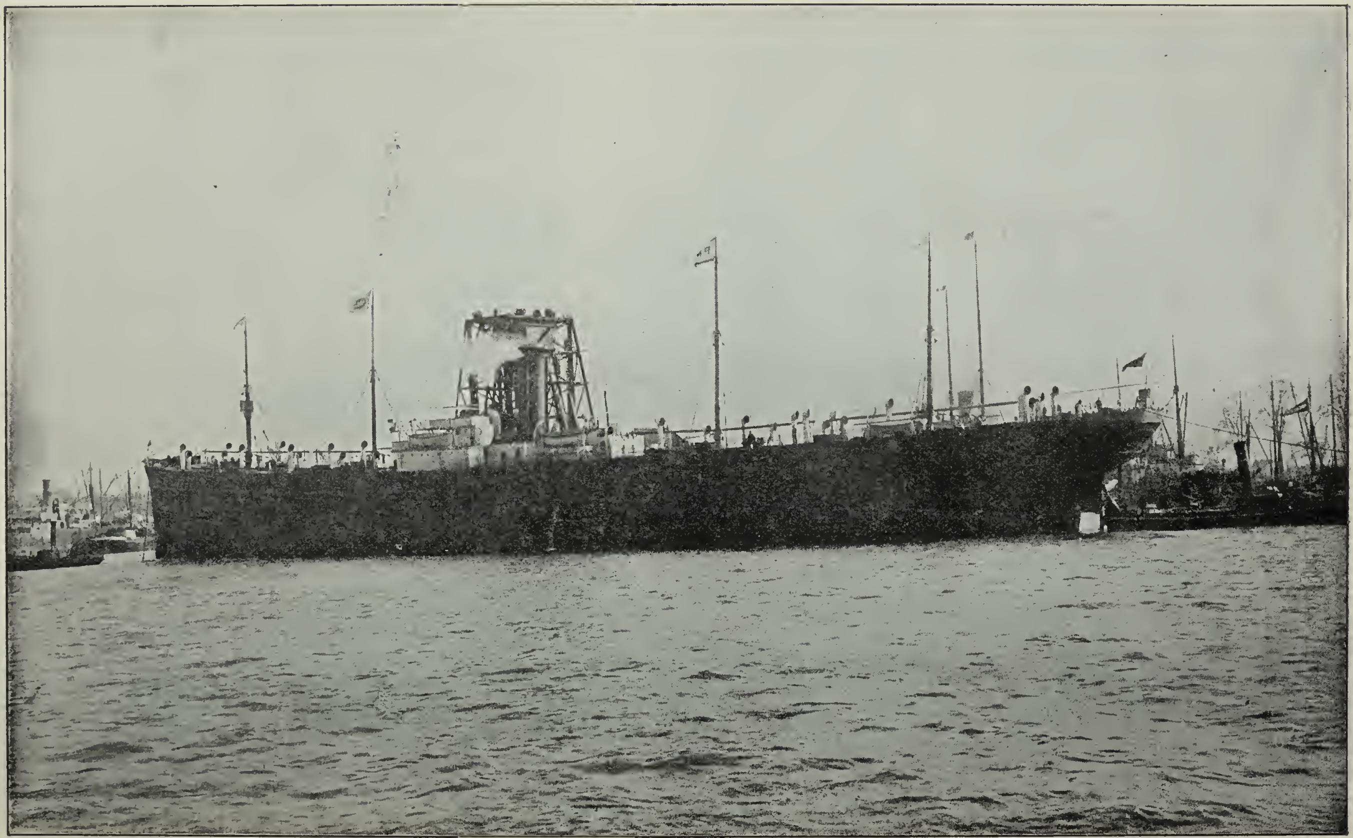
(*) Of the vessels entered or gone to sea through the New-Waterway in 1905, 525 had a depth of 67—70 d.M., 409 of 70—73 d.M., 236 of 73—76 d.M., 121 of 76—79 d.M., 24 of 79 d.M., 14 of 80 d.M., 10 of 81 d.M., 7 of 82 d.M., 1 of 83 d.M., 5 of 84 d.M., 4 of 85 d.M., 6 of 86 d.M., 2 of 87 d.M., 1 of 88 d.M. and 1 of 89 d.M.

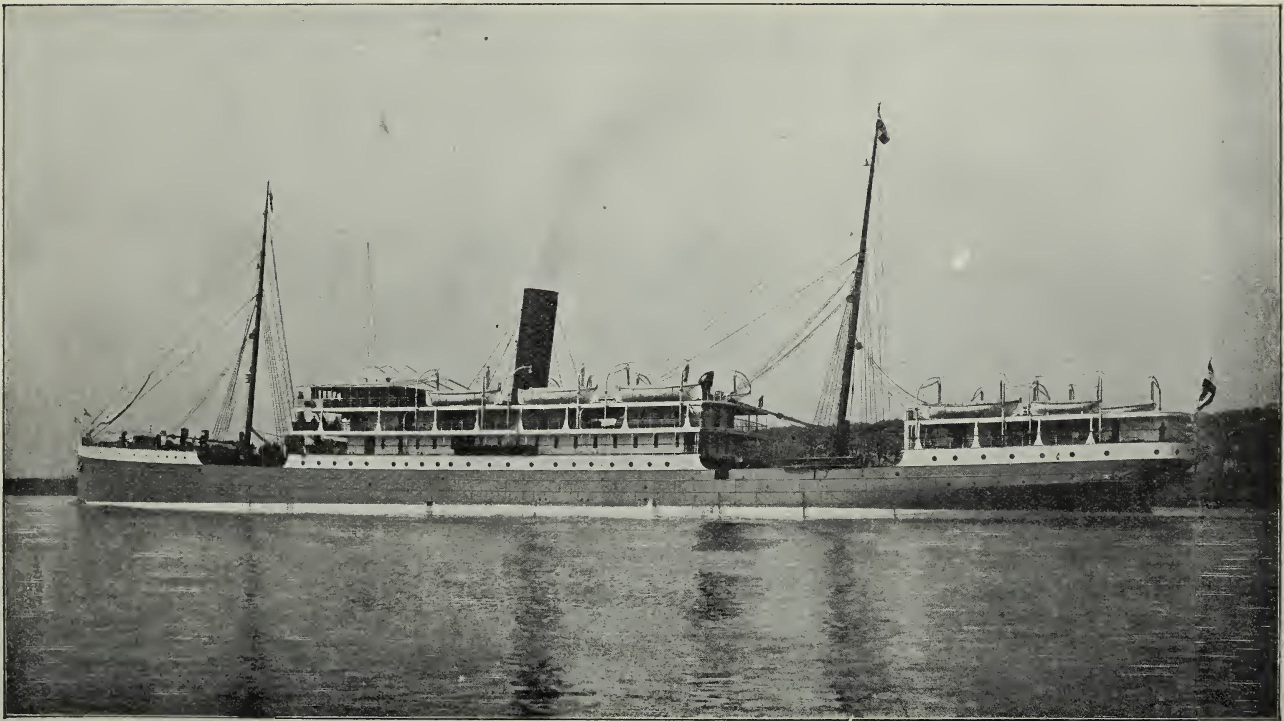


s.s. MANCHESTER CORPORATION, Reg. tons 5473, loading 5000 tons of Cokes.

„on this or any other occasion do I intend going further than what „I consider to be true and just. I say now that it is a risky matter, but „it is an improvement we must risk; it is a case like that of an „uneven struggle taken up for freedom and independence. If „we remain as we are now, we shall be out-done; and shall be lost. „It therefore appears to me that it is our unavoidable duty to „grasp the hand that can save us.”

The result of what was called a „risky matter” has been crowned with success. — Our coast is henceforth accessible to all foreign traffic.

This article was written by W. F. LEEMANS Esq. and appeared in „The Memorial of the 50 Years' „Existence of the Royal Institute of Engineers.”



Twin S.S. „SINDORO", 5000 tons, Rotterdam Lloyd.

SAILORS HOME - ROTTERDAM.

The Sailors Home was established in 1856 by the liberal gifts of several Gentlemen feeling for the welfare of Seamen, under the protection of his royal highness Prince Hendrik der Nederlanden.

The establishment is entirely based on liberal principles, without any difference as to nationality or religion, every man boarding in the home has the same rights and is under the same obligations.

The home is a large airy building with about one hundred seperate bed-rooms, every boarder having a room for himself, furnished with a good and clean bed and washing-stand. Besides this there are billiard- and reading-rooms, a bath-room and a large dining-room where meals are served, the meals always consist of fresh provisions and at dinner beer is supplied without extra charge.

In connection with the home the savingsbank is opened for the Seamen all day to deposit or reclaim money. 3% rent is paid for deposits.

Seamen are at liberty free to enter and leave the home at all times, a porter being in attendance at the door, day and night.

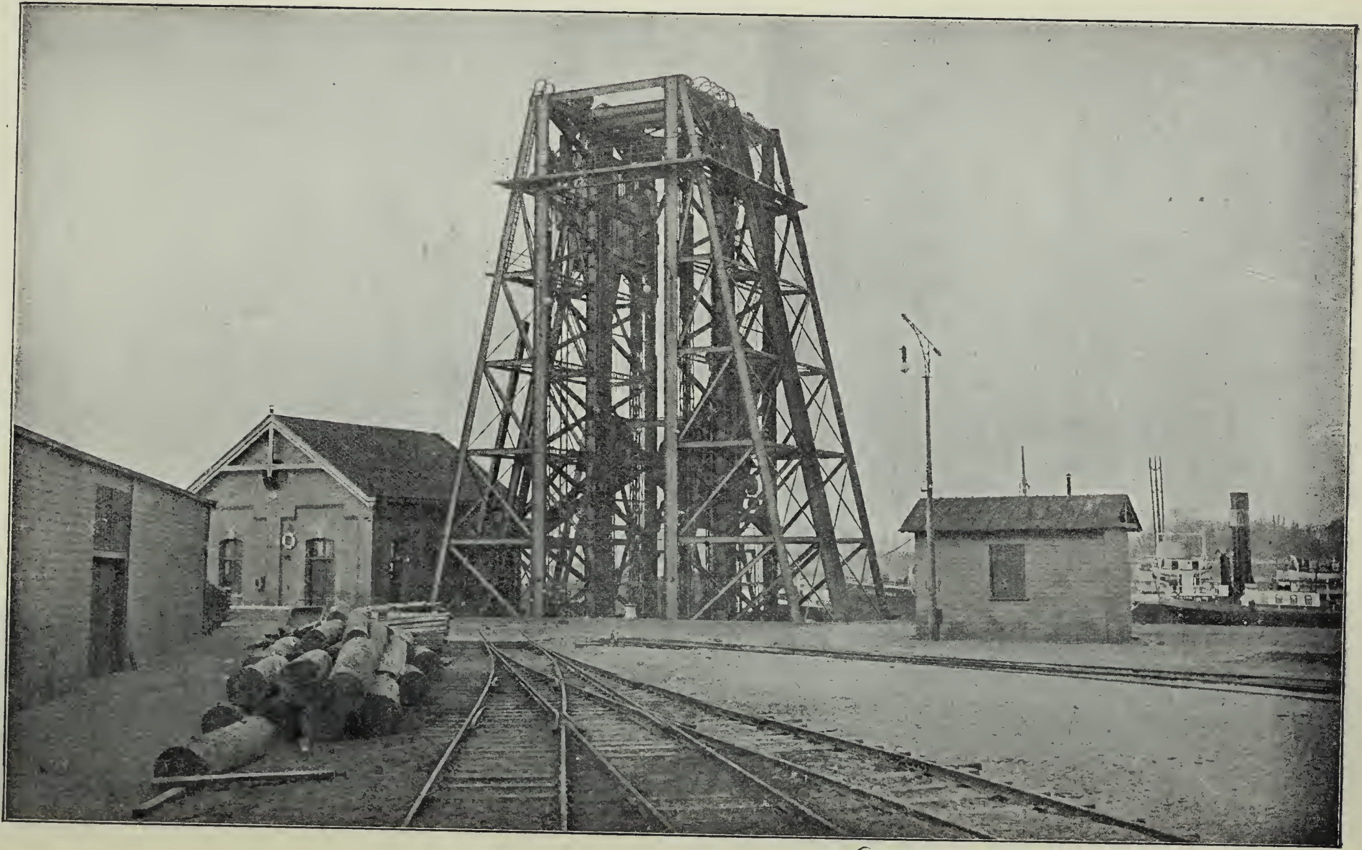
Seamen are taken from the ships with their luggage by the boatmen connected to the home at a charge of 75 Cents or one shilling and three pence; these boatmen wear caps with a silver band, bearing the words „Sailors home" in black.

As a rule Seamen pay one week board in advance; however if they are not paid off, they are not only taken up free but they can also obtain and advance on their wages, which is refunded when they are paid off.

Under many other circumstances Seamen unable to pay in advance can enter the home and even destitute Seamen are not refused but assisted in buying the necessary clothes if they only prove themselves worthy of help, and that they can account for their distress in a satisfactory way.

The charges in the home are: for officers *f* 9.10 or 15/2 and for men *f* 7.70 or 12/10 a week. If staying less than one week: officers are charged *f* 1.50 or 2/6 and men *f* 1.20 or 2/- a day.

Seamen entering the home may deposit their money with the director, they receive a note book in return which must be shown every time they want to draw money; this amount is then deducted from their deposits so that they can always see at a glance how much there is left.



COAL-LIFT. *(See page 82 - 83.)*

THE HARBOUR OF ROTTERDAM.

Its history and development.

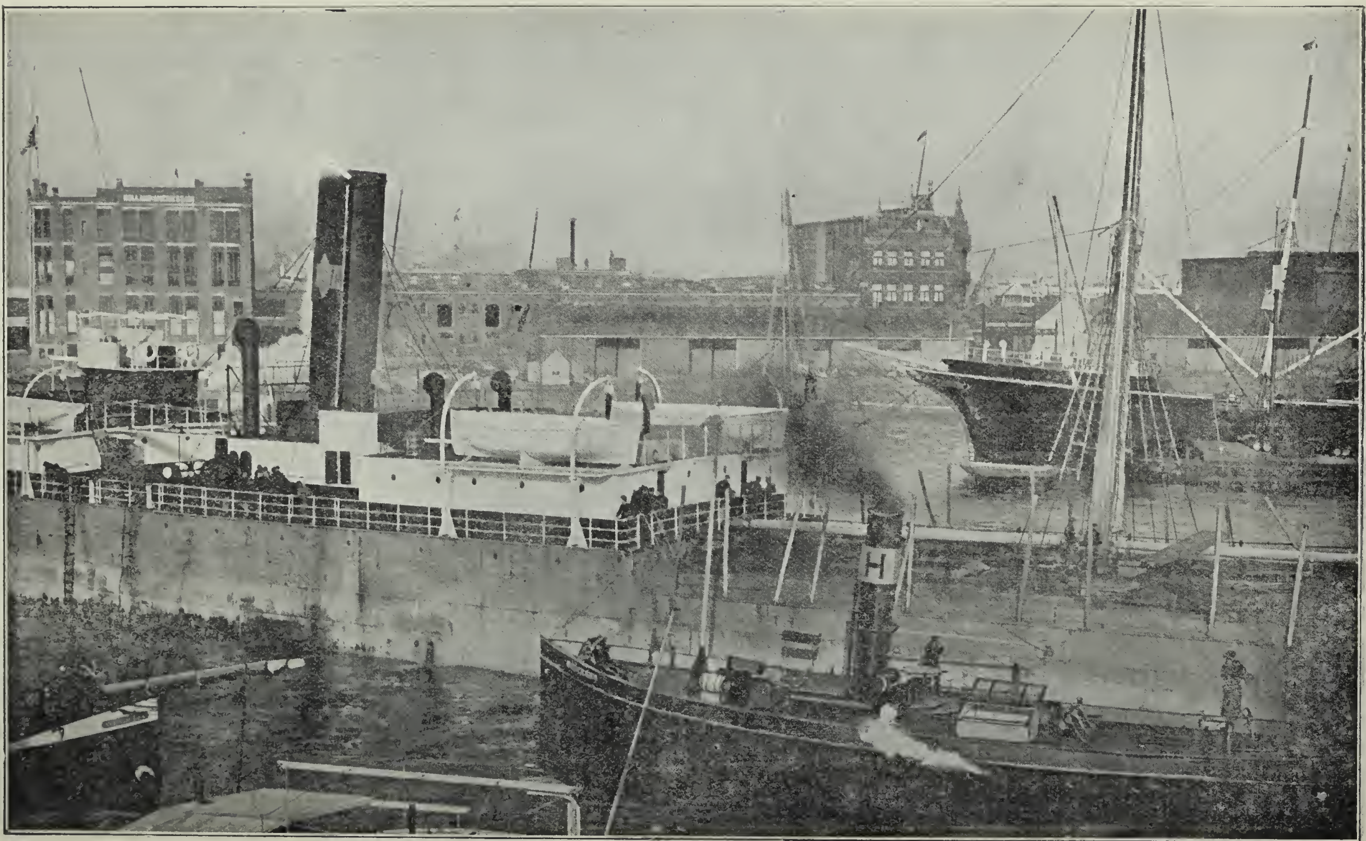
Rotterdam was, as Amsterdam, long ago a village of fishermen and sailors built on the right-hand side of the River Nieuwe Maas. In the second part of the 13th century Rotterdam was named a town. At the end of the 16th and in the beginning of the 17th century, the harbours of Rotterdam were improved and consequently trade and navigation began to flourish. Rotterdam entered into a new period of prosperity, when the New Waterway from Rotterdam to Sea was opened; vessels now enter through the New Waterway with a depth of 8,50 M. and reach Rotterdam in 2 hours without discharging into lighters.

The number of inhabitants at the beginning of the 19th century was 53,212, in 1850 90,073, in 1900 319,866 and at the present time about 400.000.

The River Nieuwe Maas leaving Rotterdam in a westward direction, passing Delfshaven, Schiedam, Vlaardingen and Maassluis flowed into the North-Sea without passing any artificial works.

This was the natural way from Sea, and for 200 years, all vessels assisted by the tide, followed no other way to Rotterdam.

The entrance of the River filling up with sand, other means of communication with the Sea were duly considered. Brouwershaven possessed a deep and safe fareway. Vessels had partly to be discharged into lighters and followed their way from Sea through the River Nieuwe Maas and through the entrance of the islands of Zeeland and Zuid-Holland. But this was a very inconvenient fareway and from the year 1827—1829, the Voornsche Kanaal was made by the Government from Hellevoetsluis via Nieuwesluis, up to



View of the RHINE-HAVEN at Rotterdam. *(See page 75.)*

Rotterdam All vessels not having over 70 M. length, 14 M. width and 5.60 M. depth could pass this Channel. The length of this Channel was 48 K.M. In the middle of the 19th century the development of trade altering the construction of Steamers the Channel was totally insufficient for their passage. By the State Law of 1863 a New-Waterway through the Hoek van Holland was to be and has been made by the Government.

DESCRIPTION

of the Development of te Quays and Havens.

The town and River of Rotterdam are especially adapted for import and export of goods. The situation guarantees the largest Steamers a safe entrance, and an excellent berth for discharging and loading cargo.

Rotterdam has the following quays, havens, docks etc.

1°. The River Nieuwe Maas.

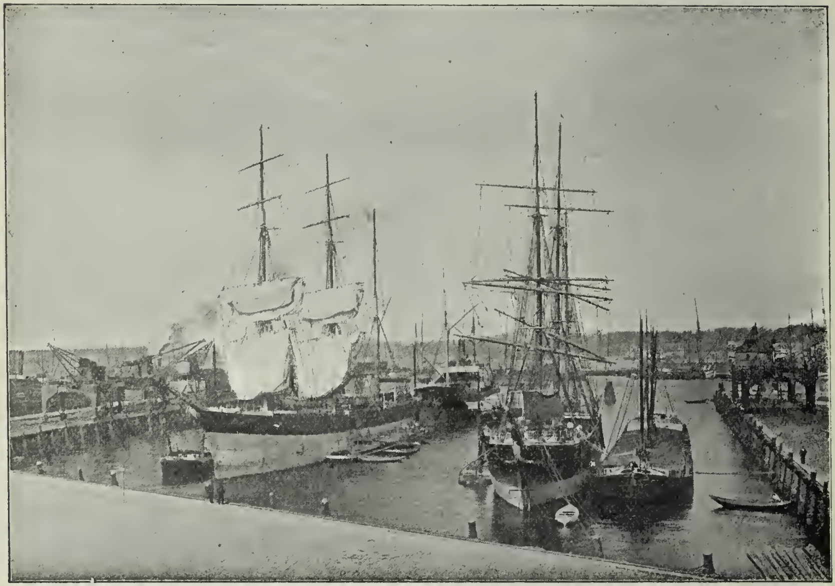
With a length of 5 K.M. This river shows the largest navigation of Holland. For the shipping of transit goods it offers splendid facilities, 29 of the largest steamers finding a safe place at the buoys. Upstream, direction Maasstation, river-vessels anchor to follow the way up to Germany.

The Right-hand side of the River has the following quays:

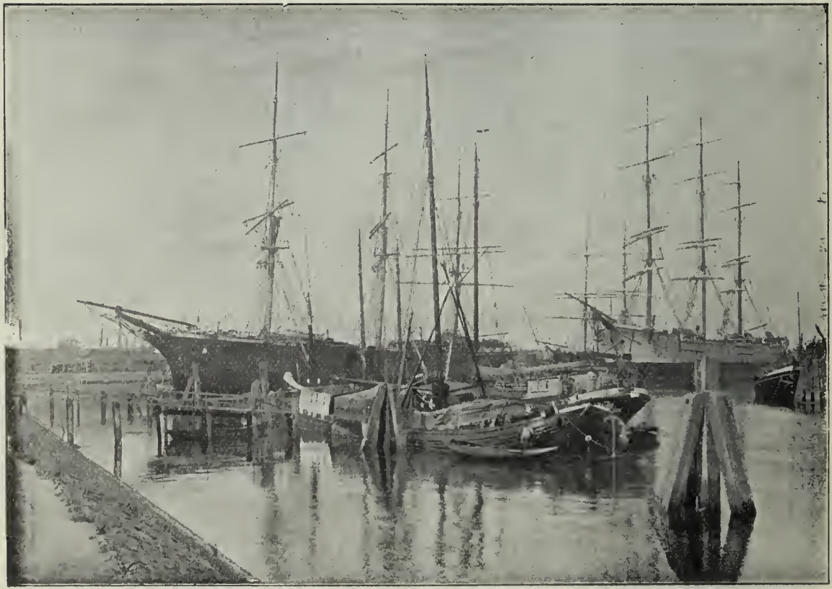
2°. The Maasstationkade, length 500 M. This quay is of wooden structure allowing vessels and steamers to discharge up to a depth of 6 M.

3°. The Oosterkade, length 360 M., stone built, depth 3,50 M. This quay is a station for the inland Steamers.

4°. The Boompjes	length	940	M
5°. The Willemskade,	„	520	„
6°. The Westerkade,	„	350	„



First Katendrechtsche Haven at Rotterdam. *(See page 75.)*



Second Katendrechtsche Haven at Rotterdam. *(See page 77.)*

These quays with a depth 5—7 M. at lowwater are the landingplaces of the regular liners. These quays were made after 1850.

7°. The Parkkade, length 510 M.

On the Right-hand side of the River are the following Havens:

8°. The Oudehaven, length 270 M. and width 70 M.

9°. The Kolk, length 138 M. and width 30—35 M.

10°. The Steiger, length 500 M and width 13 M.

11°. The Groenendaal, length 270 M. and width 10 M.

These are the old havens of Rotterdam.

12°. The Nieuwehaven, length 500 M. and width 40 M.

13°. The Boeren- and Buizengat, length 1460 M. and width 20—40 M.

14°. The Haringvliet, length 400 M. and width 65 M.

15°. The Blaak, length 150 M. and width 55 M.

Before 1870 the Blaak and Oude Haven were one haven.

16°. The Wijnhaven, length 600 and width 45 M.

17°. The Scheepmakershaven, length 790 M. and width 45 M.

18°. The Leuvehaven, length 870 M. and width 65 M.

The havens 12—18 were made from 1590—1620; with a depth of 1.80 M. — 4 M., at lowwater.

Before the harbours at the Nieuwe Maas shore were made, these havens were the berth for Sea-going vessels and for steamers plying up the river.

At the same time these havens gave room for the vessels employed for inland trade and for Rhine crafts.

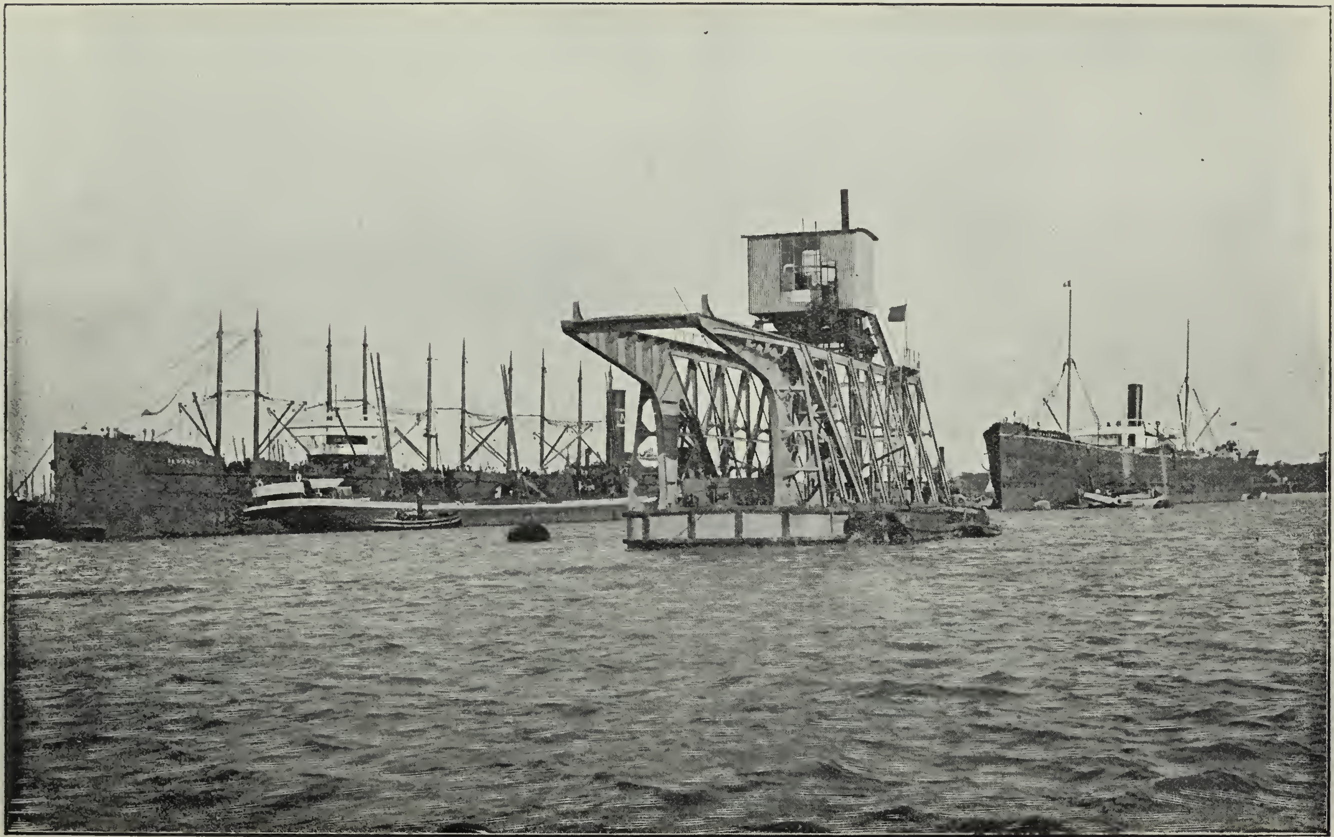
19°. The Zalmhaven, length 300 M. and width 120 M.

The southside has a wharf; the wharf formerly in the Scheepmakershaven is now in this Zalmhaven.

20°. The Kleine Veerhaven, length 60 M. and width 18 M., depth 3 M. at lowwater, landing place for sloops.

21° The Veerhaven, length 200 M. and width 70 M., depth 6 M. at lowwater. This haven was made in 1854.

22°. The Parkhaven, length 480 M. and width 100 M., with a depth of 7, 5 - 8 M. at lowwater; the quays on the east-side are ready.



View of the MAASHAVEN (entrance) at Rotterdam. *(See page 77.)*

23°. The St. Jobshaven, length 350 M., width 100 M., depth 8.5 M. at lowwater; this haven is in construction.

24°. The Schiehaven, length 610 M., width 120 M., depth 8.5 M. at lowwater; all the quays are ready.

25°. The Schiemond, length 190 M., width 35 M., is the entrance to the Middenkous.

26°. The Middenkous, length 510 M., width 65 M., depth from 3 M. up to 6 M. is for laying vessels up. This haven is part of the Nieuwe Maas, closed up by a dam.

27°. The Voorhaven, length 380 M., width 35 M. and depth 2.50 M. till 3 M.; the fareway through the Delfshavensche Schie to the principal towns of Zuid-Holland.

28°. The Achterhaven, length 280 M., width 50 M., depth 5 M.

29°. The Buizenwaal, length 100 M., width 80 M., depth 1,90 M. deposit for planks and beams.

These last 3 havens belonged to Delfshaven formerly but now to Rotterdam.

The Noordereiland confronts the Boompjes and the old town.

This isle is connected with the other side by two bridges; and further on in a southerly direction by two turning bridges.

The bridges on the east-side are for railway only.

Along this Noordereiland.

30°. The Maaskade (East), length 570 M., depth 3 M. for River-Steamers.

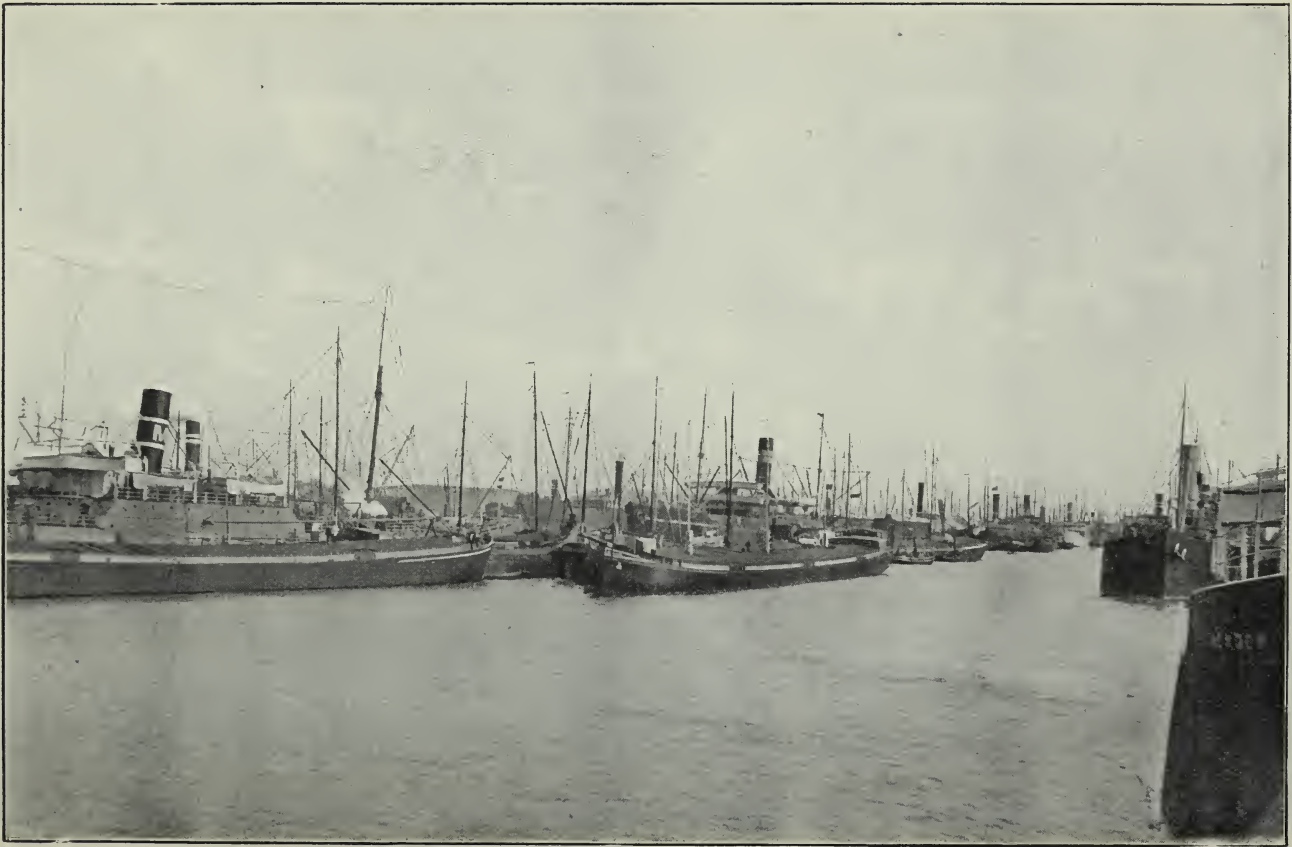
31°. The Maaskade (West), length 820 M., depth 3 till 6 M. for River-Steamers, passenger-boats and Rhine crafts.

In the Koningshaven.

32°. The Prins Hendrikkade (East), length 500 M., depth 5,50 M. for passengers and goods by River-Steamers to Germany and Belgium.

33°. The Prins Hendrikkade (West), length 800 M., depth 5,60 M. or the large traders and Rhine-Steamers.

34°. The Feijenoordkade in the direction of the Nassauhaven, length 300 M., depth 3,50 M., no quays, but with sloping sides of stone structure and piers for discharging and loading.



View in the MAASHAVEN at Rotterdam. *(See page 77)*

35°. The Nassaukade, length 610 M., depth 6 M., near the Koningshaven, also for large traders.

36°. The Stieltjeskade, length 325 M., depth from 6 till 6,50 M.

37°. The Wilhelminakade, length 850 M., depth from 7,50 up to 8,50 M. Loading and discharging place of the Holland-America-Line and the Rotterdamsche Lloyd.

38°. The Katendrechtsche kade, length 360 M. depth 7 M., partly provided with quays and sloping sides of stone structure.

39°. The St. Janskade, length 850 M, depth from 7 M. till 8 M., belonging to the Deutsch-Amerikanische Petroleum Gesellschaft, Pakhuismeesteren and the American Petroleum Company.

On the East-side of the Kortenoordsche Haven, with a length of 320 M. is the Koninklijke Nederlandsche Petroleum Maatschappij and the Deutsch-Russische Naptha Import-Gesellschaft, the first for stock of Petroleum, the second for stock and refining of Benzine.

40°. The Nassauhaven, length 600 M., width 80 und 50 M., with a depth of 5 M. and 3 M at lowwater.

41°. The Persoonshaven, length 570 M. width 60 M., depth 3,50 M

These two latter havens are let for warehousing etc.

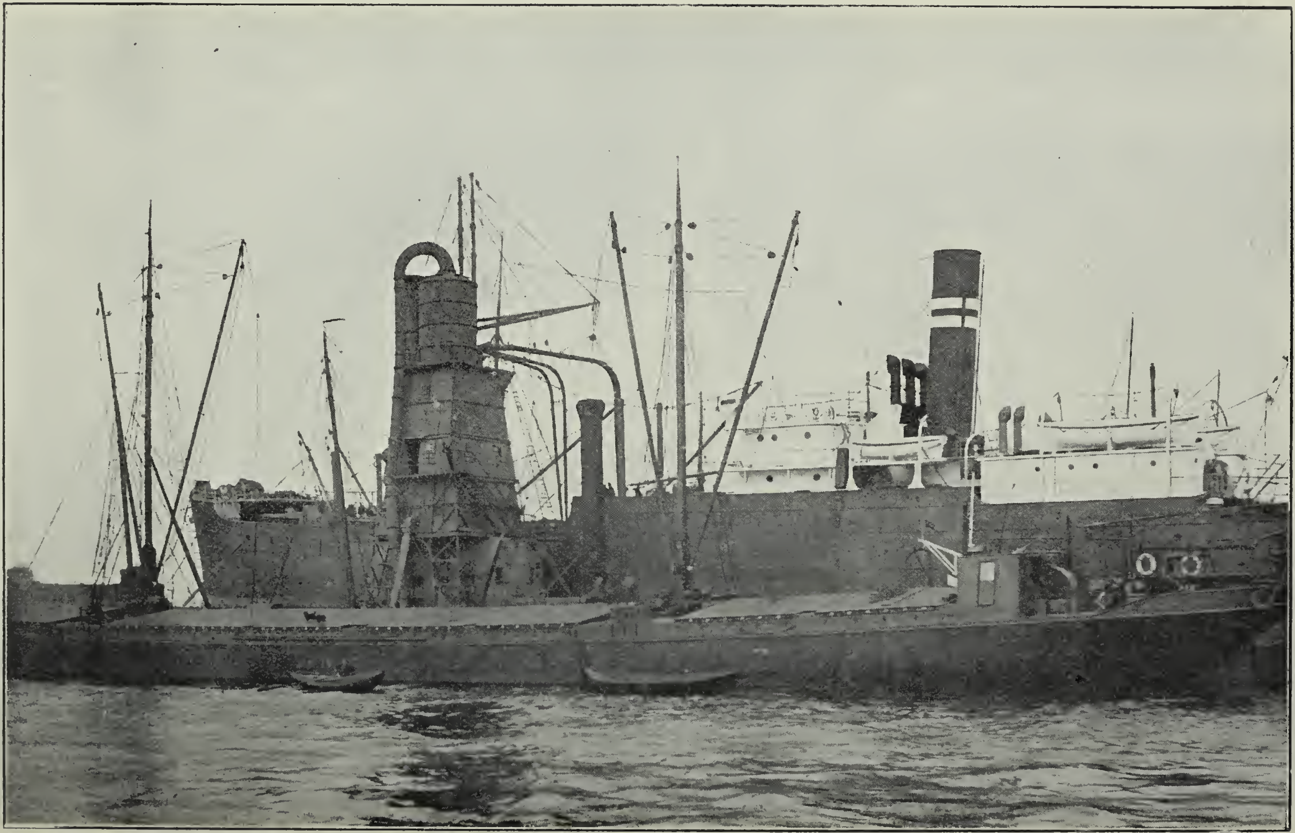
42°. The Binnenhaven, length 1000 M., width 80 M., depth 7 M and 6.50 at lowwater.

43°. The Entrepôthaven, length 200 M., width 60 M. and depth 7 M. at lowwater.

44°. The Spoorweghaven, length 1100 M, width 115 M., depth from 7 till 7.50 M. at lowwater.

45°. The Rijnhaven, depth from 7 up to 8,50 M. at lowwater, has a surface of 30 H.A.; the entrance has a width of 140 M., the largest width is 450 M. This haven is made for transhipping goods from the ships into Rhine-vessels. The North- and East-side and the greater part of the South-side are provided with quays for a length of 1805 M., the remaining length is of sloping sides with stone structure and wooden piers.

46°. The first Katendrechtsche haven, length 180 M., width 105 M. and depth 7.50 at lowwater. The whole of this haven is provided with quays and is chiefly for discharging minerals.



GRAIN-ELEVATOR in the Maashaven discharging a liner at the rate of 160 tons per hour.

47⁰. The Second Katendrechtsche haven, length 230 M., width 130 M., depth 7.50 M. at lowwater.

Provided with quays.

48⁰. The Maashaven, width 320 M,, depth 8,5 M. at lowwater, with a surface of 58 H.A. The entrance has a width of 140 M. Partly provided with quays and sloping sides of stone structure.

At this haven discharging can be effected into the Railway trucks, in bonded warehouses and also in the Rhine vessels.

The new Iron floating-Dock lifting-capacity 15600 tons, is in this haven.

49⁰. The Dokhaven, length 320 M , width 150 M., depth from 6 M. up to 11,20 M. at lowwater. The walls are of stone structure. The 3 other Iron floating-Docks are in this Dokhaven.

50⁰. The St. Janshaven, length 125 M., width 60 M., and depth 3 M. at lowwater. Belonging to the Deutsch-Amerik. Petroleum Gesellschaft, has also piers for River-Steamers.

51⁰. The Petroleumhaven, length 165 M., width 60 M., depth from 3 till 6 M. at lowwater, belonging partly to the Pakhuismeesteren.

52⁰. The Kortenoordsche haven, length 340 M., width 70 M., depth from 7 M. up to 8 M. at lowwater. The Company Petrole de Rieth & Co. (Russia) and the Pure-Oil Company are established in this Haven.

53⁰. The Waalhaven, depth 8,5 M. at lowwater, with a surface of 310 H.A., is in construction. At this moment ± 12 H.A., depth 4 M., are ready. The entrance has a width of 350 M. The site of the Griendtsveen Moss Litter Company Ld. for stock of Mosslitter.

Recapitulation of the total surface and length of havens and quays:

	Surface of havens. H.A.	Length of quays. K.M.
Right side of River. . . .	53.18	19.40
Left side of River	145.49	21.57
Total . .	198.67	40.97

the surface of Koningshaven and the River excepted.

29 Mooring buoys have been placed in the River Nieuwe Maas.

The building of New Havens on both sides of the River is being considered.

OIL-TANKS of the American Petroleum Company. *(See page 77.)*

IMPLEMENTS.

With the exception of the engines belonging to the Dutch Railway Company, the town has only two cranes, one hand-crane and one steam-crane, on the right-hand side of the River Maas. None on the quays of the Noordereiland, while the left-hand side of the River is provided with cranes, lifts and capstans.

The Entrepôthaven and the east-side of the Binnenhaven are provided with hydraulic power, which is drawn from an accumulator in the immediate neighbourhood, while a second accumulator is near the Coal lift. These two steam engines have 100 Indicated horse power each and the pressure of the water can be brought up to 60 atmospheres.

The Spoorweghaven and the Westside of the Binnenhaven are provided with steam cranes.

The eastside of the Spoorweghaven, Wilhelminakade, Rijnhaven, Stieltjeskade, 1st and 2nd Katendrechtsche haven are provided with sheds and the adjacent warehouses also with apparatus for supplying electric light.

The Lighting by electrical power and transmission of same are supplied by the town of Rotterdam.

The table on page 82 and 83 contains the description of the different engines at disposal on the quays and in the docks, also indicating the lifting-power in kilograms.

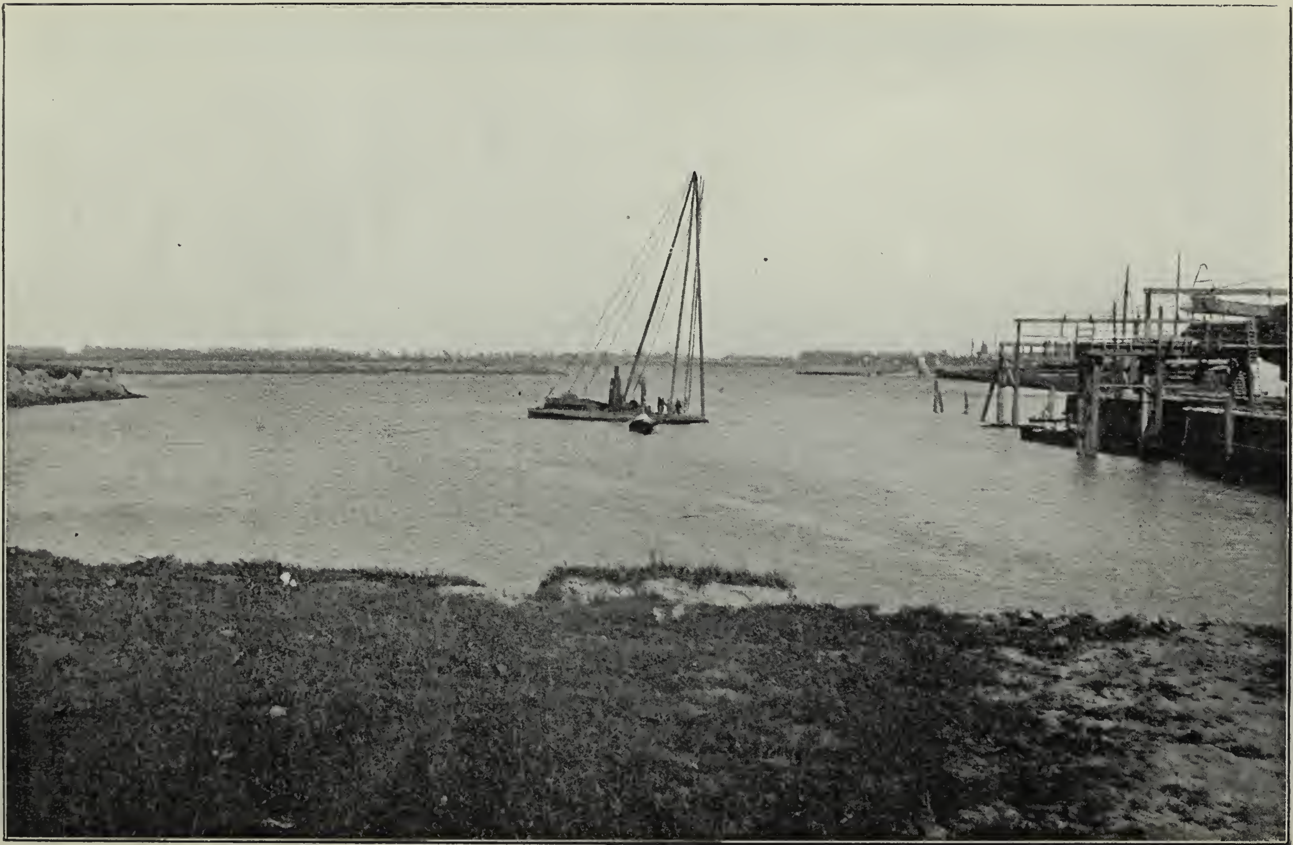
Besides the town has a floating steam-crane with 32000 kilograms lifting-power, constructed for carrying material, needed for the quays.

The Maatschappij voor Scheeps- en Werktuigbouw Feijenoord has a steam crane at its wharf of 60.000 Kg. lifting capacity.

The Berging-Maatschappij has 3 transportable cranes of 16.000 Kg. lifting power each.

Wilton's Engineering & Slipway Co., has a steam floating-crane with 3 capstans with a lifting-power of 5.000, 20.000 and 60.000 kilograms. Further there are two slipways for ships not exceeding 3000 Tons weight and adjoining boilershop, forge, shipbuilding yard, machineshop and complete ship- and engine repairing plant.

ALTGELD HALL STACKS



The WAALHAVEN at ROTTERDAM (in construction.)

This haven, when completed will have a surface of 310 H.A. and a depth of 8,5 M. at lowwater. (*See page 77.*)

IMPORT OF SANTOS-COFFEE in HOLLAND.

1863 - 1906.

1863	18.400	Bags	1885	50.200	Bags
1864	13.100	„	1886	23.700	„
1865	46.000	„	1887	98.700	„
1866	13.000	„	1888	76.100	„
1867	4.100	„	1889	150.100	„
1868	24.500	„	1890	232.600	„
1869	51.800	„	1891	234.200	„
1870	0	„	1892	217.000	„
1871	0	„	1893	277.400	„
1872	0	„	1894	185.100	„
1873	3.600	„	1895	452.900	„
1874	29.800	„	1896	502.900	„
1875	71.600	„	1897	615.000	„
1876	11.500	„	1898	875.700	„
1877	5.900	„	1899	919.100	„
1878	96.500	„	1900	913.700	„
1879	66.900	„	1901	1.200.151	„
1880	36.800	„	1902	1.285.904	„
1881	37.700	„	1903	917.735	„
1882	45.300	„	1904	445.254	„
1883	100.100	„	1905	700.713	„
1884	18.700	„	1906	992.500	„

DEVELOPMENT of the ROTTERDAM TRADE since 1872.

Number of STEAM- and SAILINGSHIPS (fishingsmacks not included) passed through the New Waterway in and out.

1872	416,	measuring	— —	M³.
1873	4.471,	„	3.738.680	„
1874	5.786,	„	4.986.747	„
1875	7.127,	„	6.602.465	„
1876	7.367,	„	6.909.485	„
1877	6.852,	„	7.162 887	„
1878	6.850,	„	7.491.882	„
1879	6.946,	„	8.314.012	„
1880	7.008,	„	8.382.969	„
1881	7.026,	„	8.350.786	„
1882	7.677,	„	9.943.296	„
1883	7.788,	„	10.829.581	„
1884	8.177,	„	12.401.375	„
1885	7.915,	„	12.366.227	„
1886	7.992,	„	12.777.469	„
1887	8.819,	„	14.528.943	„
1888	9.488,	„	15.715.512	„
1889	9.543,	„	16.283.726	„
1890	9.637,	„	17.078.007	„
1891	9.458,	„	17.535.567	„
1892	9.191,	„	18.160.769	„
1893	9.628,	„	20.432.165	„
1894	10.731,	„	23.947.859	„
1895	10.922,	„	24.171.138	„
1896	12.484,	„	28.656.774	„
1897	13.046,	„	31.050.607	„
1898	13.590,	„	33.188.079	„
1899	14.446,	„	35.955.203	„
1900	15.202,	„	36.348.613	„
1901	14.411,	„	36.413.379	„
1902	14.169,	„	37.109.769	„
1903	15.802,	„	43.361.768	„
1904	16.284,	„	44.559.793	„
1905	17.937,	„	49.036.539	„
1906	18.818,	„	53.396.417	„

1907. The total number up to December 15th was 19.898 Steam- and Sailingships.

The total tonnage up to December 15th amounted to 57.392.400 M³.

An increase of 5½ million M³. may thus be reckoned for the whole year 1907.

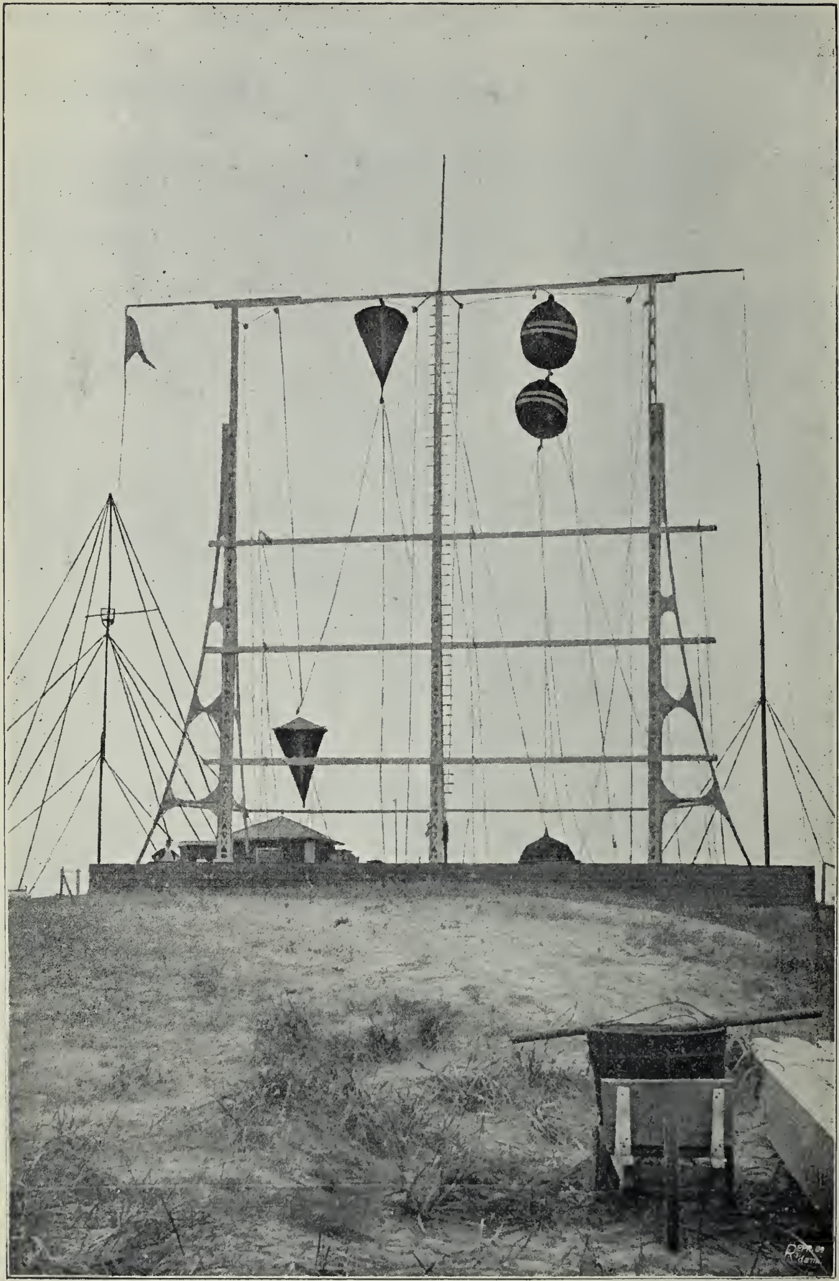
Signals of draught of water by day.

A general *signal-system* has been introduced *to show the draught of water by day.*

These signals, as printed on page 118 and 119 inward, 122 and 123 outward will be used for the bars of the *Bokkengat, New-Waterway* and *Ymuiden.*

At the *Hoek van Holland* the day-signals will be hoisted on the signal-post at the *Northside of the entrance of the Waterway.*

30 decim.	— to	9 ft.	10	62 decim.	to	20 ft.	4	92 decim.	— to	30 ft.	2
32 „	„ „	10 „	6	64 „	„ „	21 „	0	94 „	„ „	30 „	10
34 „	„ „	11 „	2	66 „	„ „	21 „	8	96 „	„ „	31 „	6
36 „	„ „	11 „	9	68 „	„ „	22 „	4	98 „	„ „	32 „	2
38 „	„ „	12 „	5	70 „	„ „	22 „	11	100 „	„ „	32 „	10
40 „	„ „	13 „	1	72 „	„ „	23 „	6	102 „	„ „	33 „	5
42 „	„ „	13 „	9	74 „	„ „	24 „	2	104 „	„ „	34 „	1
44 „	„ „	14 „	5	76 „	„ „	24 „	10	106 „	„ „	34 „	9
46 „	„ „	15 „	1	78 „	„ „	25 „	6	108 „	„ „	35 „	4
48 „	„ „	15 „	9	80 „	„ „	26 „	2	110 „	„ „	36 „	0
50 „	„ „	16 „	4	82 „	„ „	26 „	10	112 „	„ „	36 „	8
52 „	„ „	17 „	0	84 „	„ „	27 „	6	114 „	„ „	37 „	4
54 „	„ „	17 „	8	86 „	„ „	28 „	2	116 „	„ „	38 „	0
56 „	„ „	18 „	4	88 „	„ „	28 „	10	118 „	„ „	38 „	8
58 „	„ „	19 „	0	90 „	„ „	29 „	6	120 „	„ „	39 „	4
60 „	„ „	19 „	8								



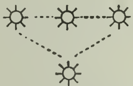
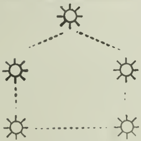
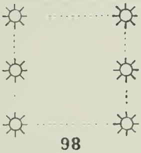
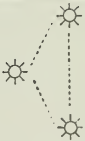
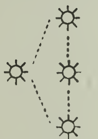
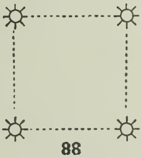
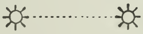
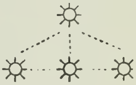
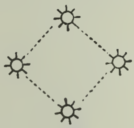
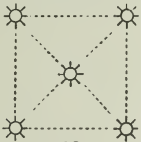
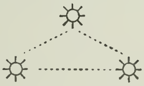
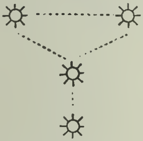
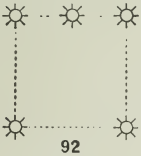
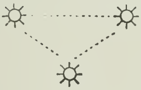
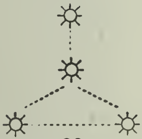
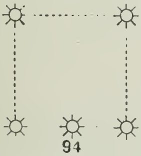
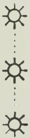
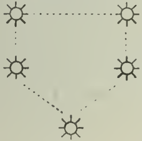
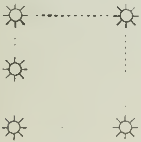
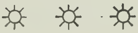
Day-Signals showing the draught of water in the New-Waterway.
This Photo was taken on 9th October 1907 at 1 P.M.
The Signal then showing 91 d.M.

NIGHT-SIGNALS
showing the draught of water in the
NEW-WATERWAY (Entering from Sea.)

They are given by white lights, hoisted to a signal post next to the post showing the draught of water during the day-time.

The signals will be given from two to two decimeters and not lower than 74 decimeters

The balls indicate the white lights and the cyfers the depth in decimeters.

 74	 86	 98	 110
 76	 88	 100	 112
 78	 90	 102	
 80	 92	 104	
 82	 94	 106	
 84	 96	 108	

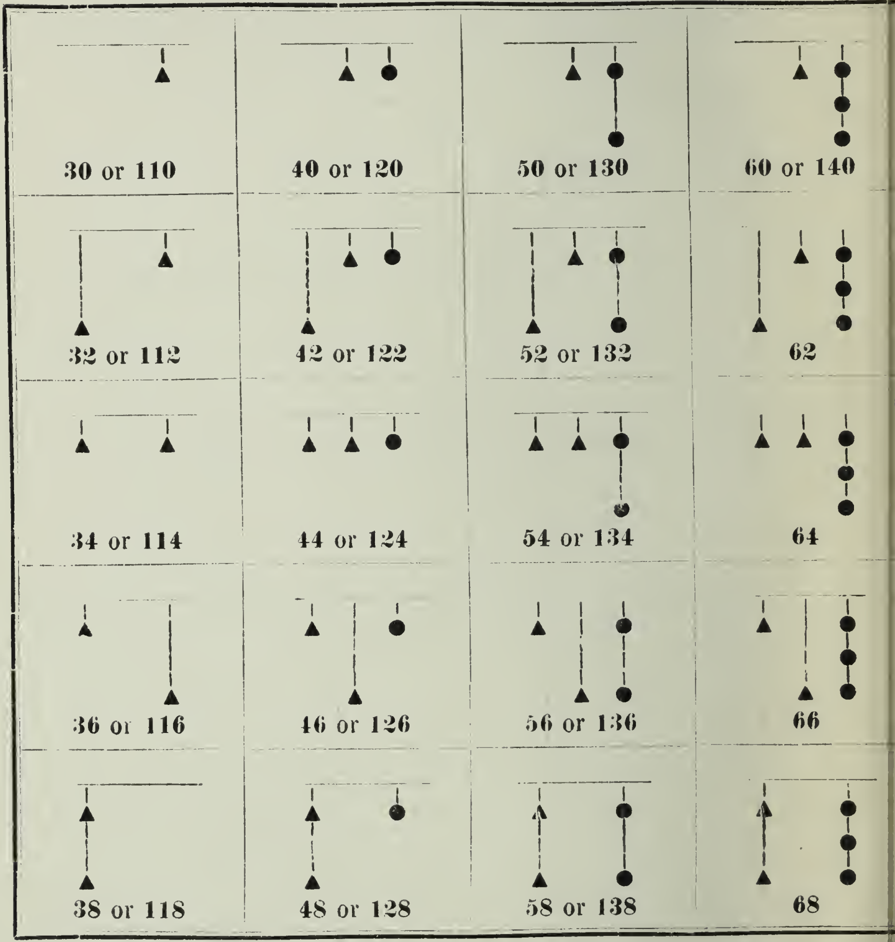
Day-Signals showing the draug

The numbers in

Black ball

INWARD.

(Entering



A blue flag hoisted to one of the signals, indicates one decimeter more.

Red flag indicates signal of danger; by night: a red light.
(For the New-Waterway only.)

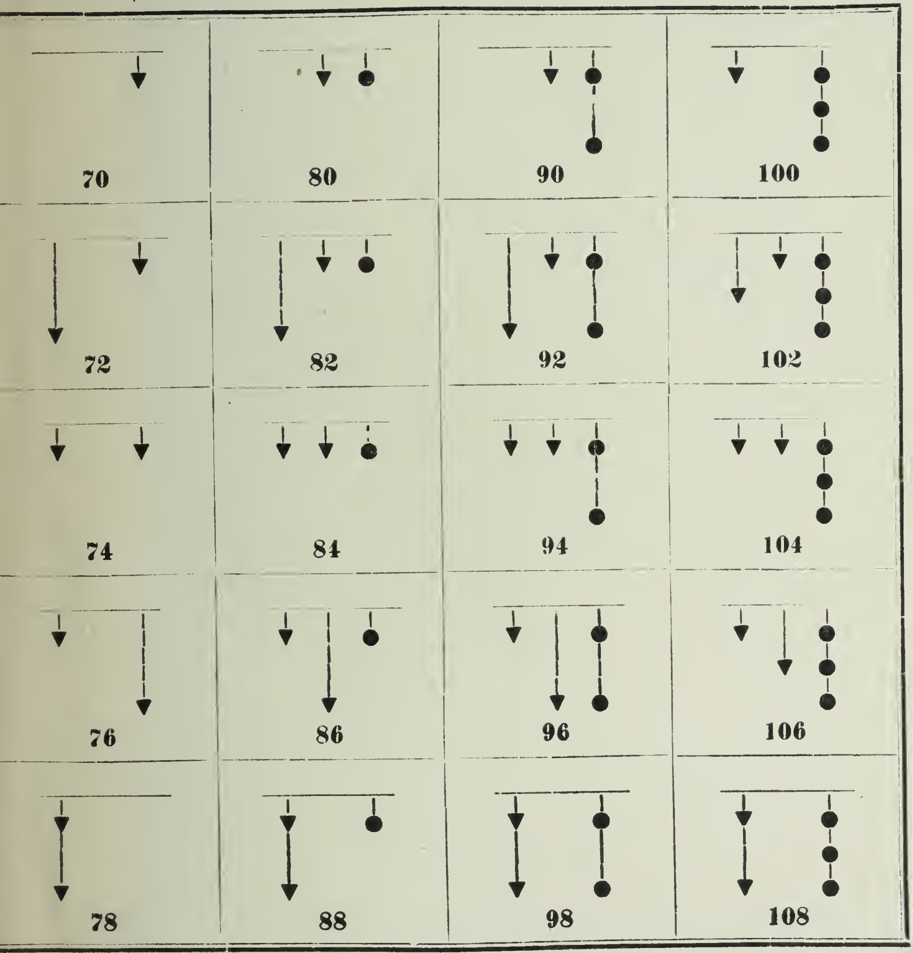
t of water on the Dutch coast.

icate decimeters

and cones.

rom sea.)

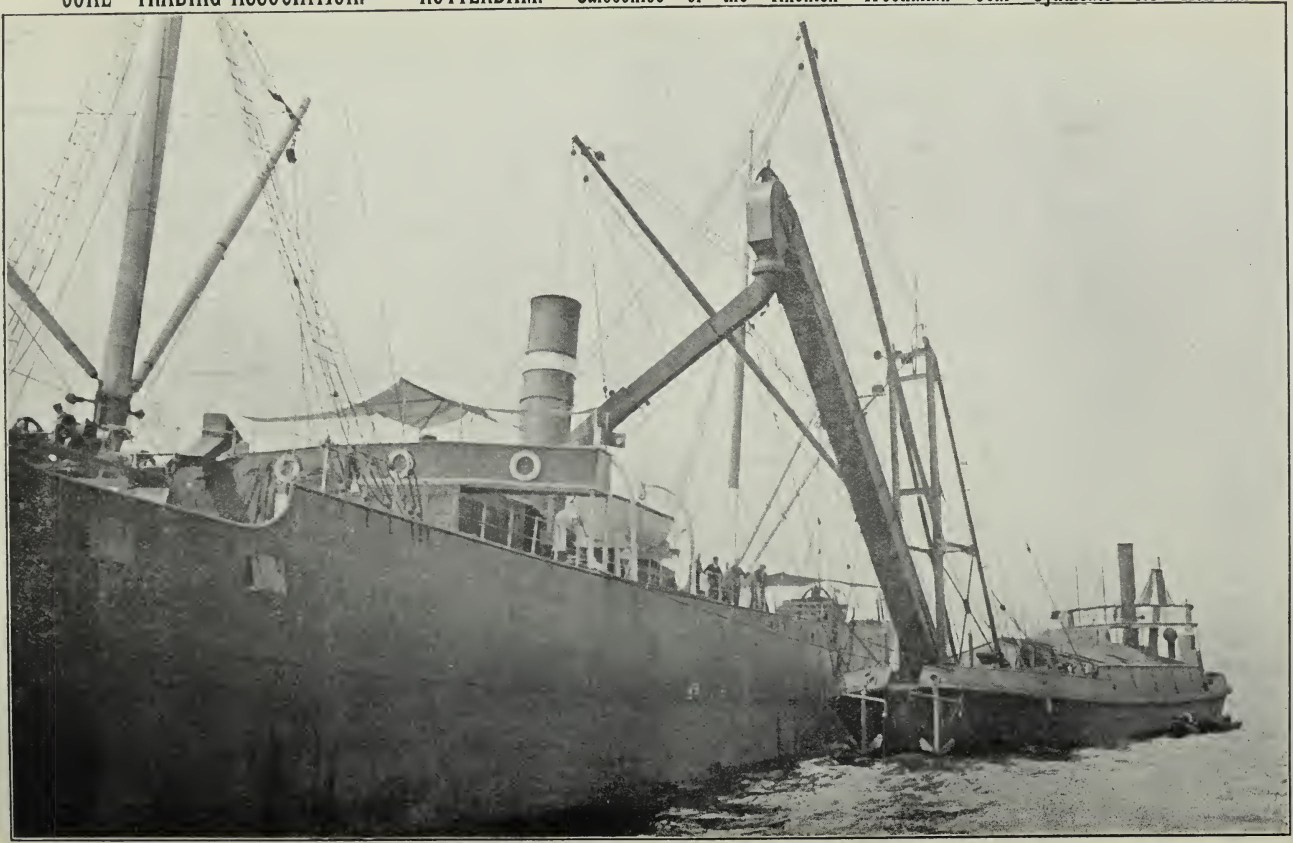
INWARD.



White flag with black cross,
highwater signal.

Blue pendant,
lowwater signal.

COAL TRADING-ASSOCIATION. - ROTTERDAM. Salesoffice of the Rhenish Westfalian Coal Syndicate for Holland.



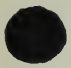
FULL WEIGHT GUARANTEED!!!

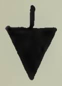
Most modern patent coalingbarge fitted with selfregistering automatic Weighing Machine.

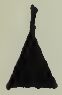
Storm-Signals.

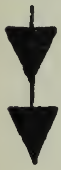
If stormy weather is to be expected, signals are given at the signalposts, at HOEK VAN HOLLAND and MAASSLUIS.

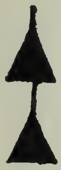
These signals are:

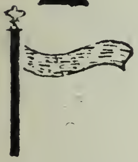

Be upon your guard.
(at night this signal is given by a red light)

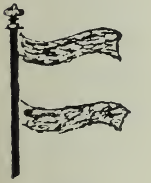

Expected stormy weather from S.W.

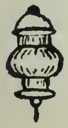

„ „ „ „ N.W


„ „ „ „ S.E.


„ „ „ „ N.E.


Turning right — Wind holing out the North.


„ left „ backing to the South.


Red light — Be upon your guard. (Night-Signal.)

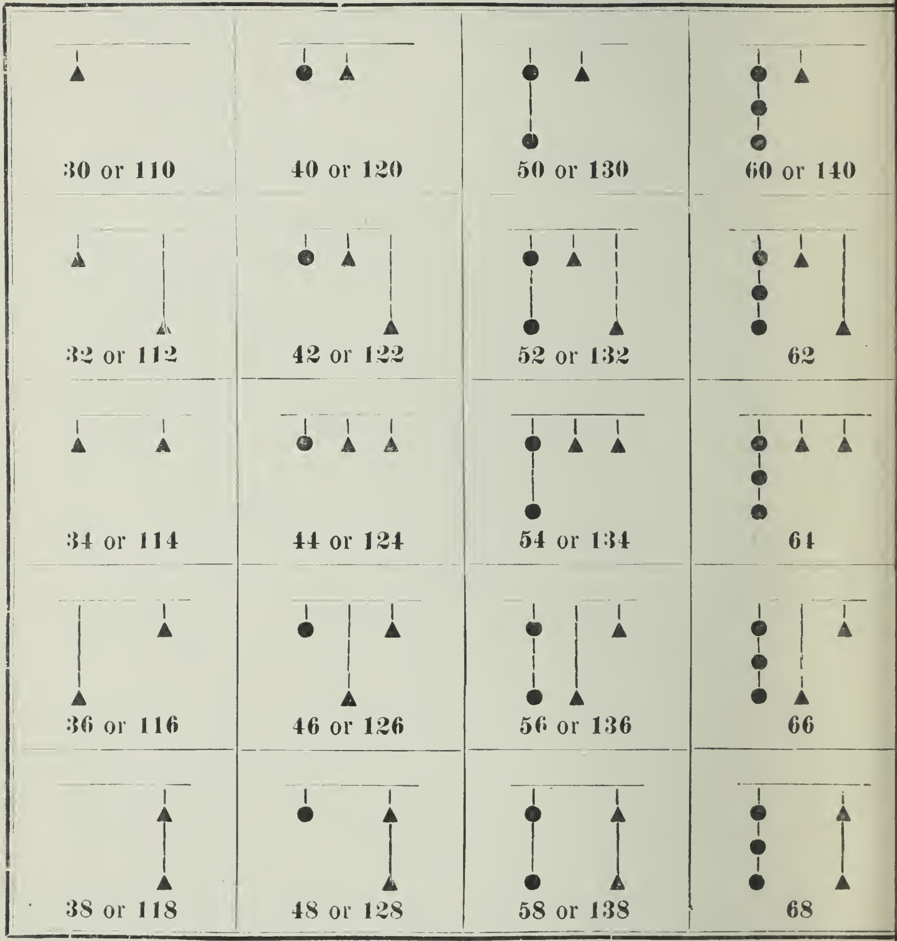
Day-Signals showing the draug

The numbers in

Black ball

OUTWARD.

(Proceedin



A blue flag hoisted to one of the signals, indicates one decimeter more.

Red flag indicates signal of danger; by night: a red light. (For the New-Waterway only.)

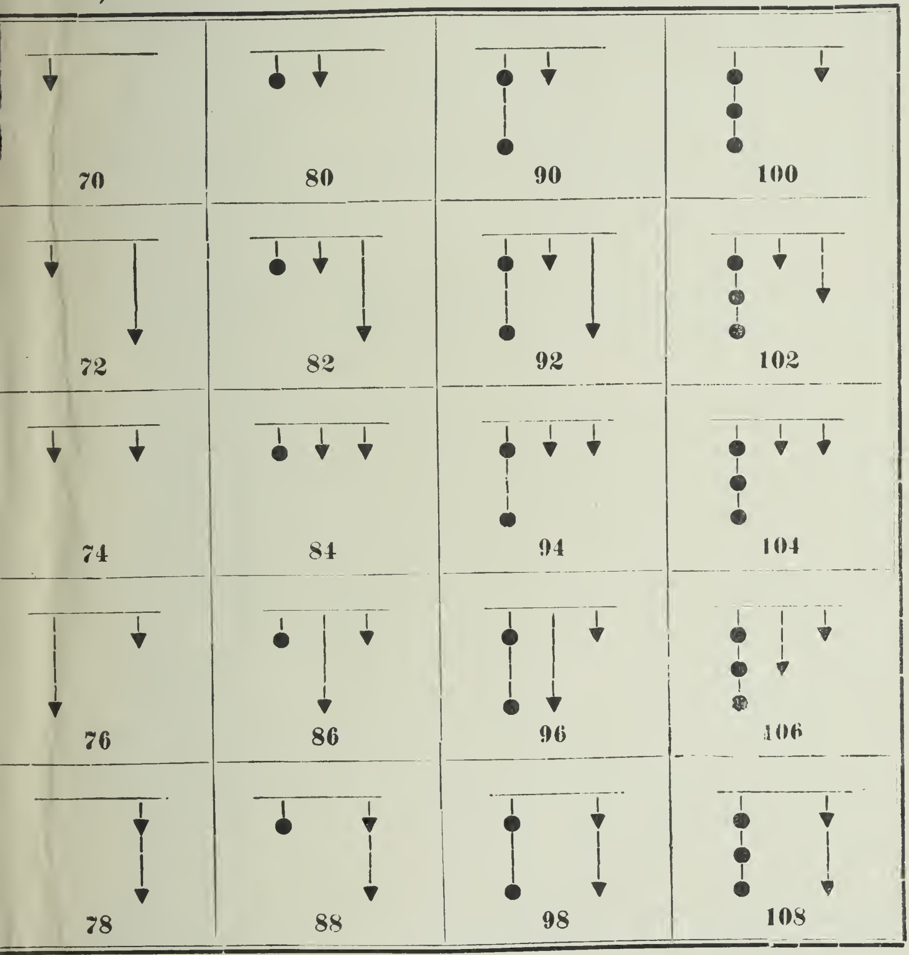
t of water on the Dutch coast.

icate decimeters

and cones.

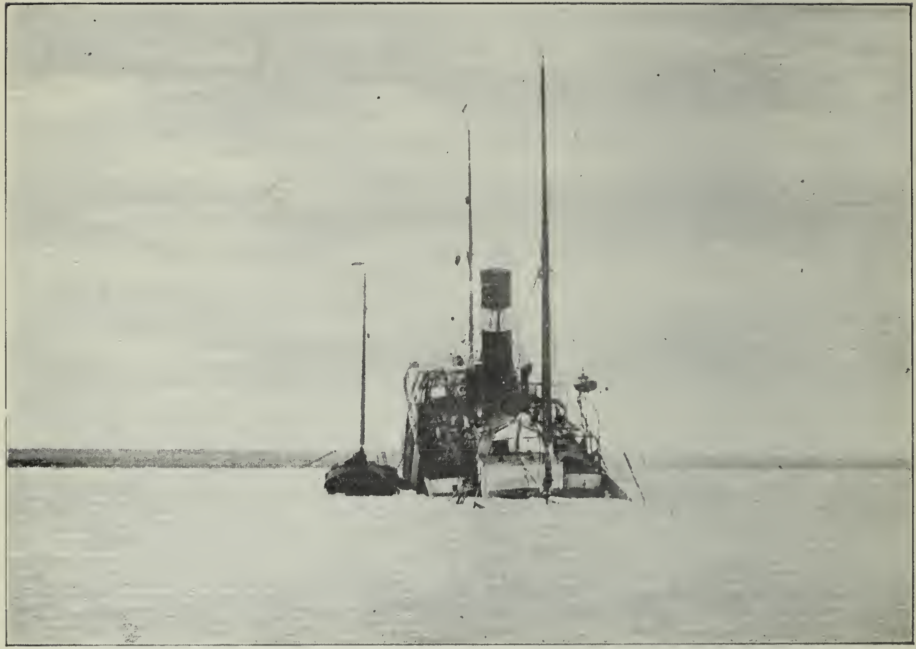
OUTWARD.

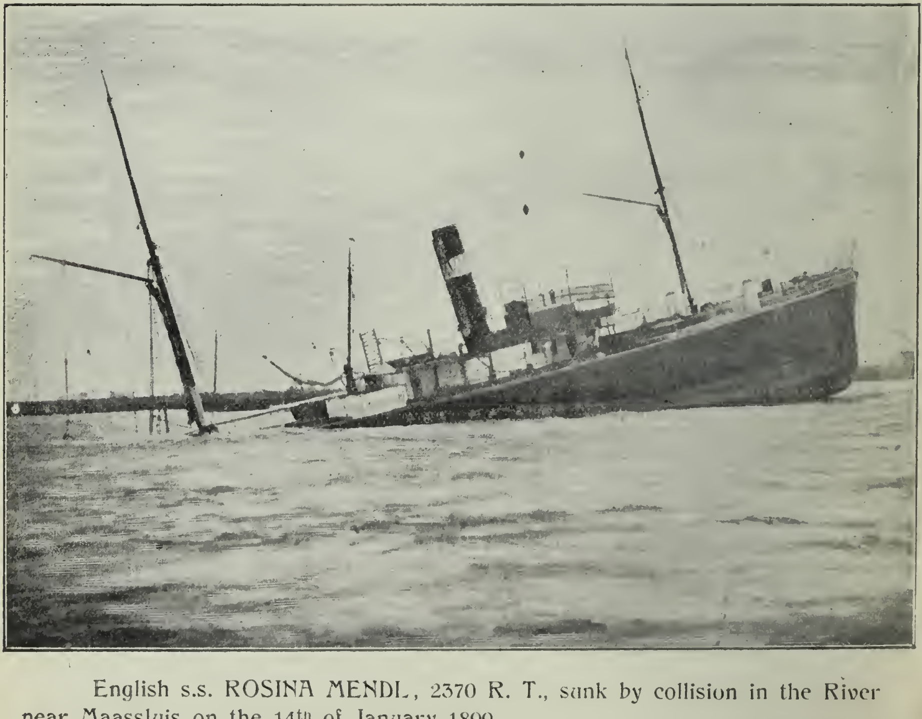
o sea.)



White flag with black cross.
highwater signal.

Blue pendant,
lowwater signal.





English s.s. ROSINA MENDL, 2370 R. T., sunk by collision in the River near Maassluis on the 14th of January 1899.

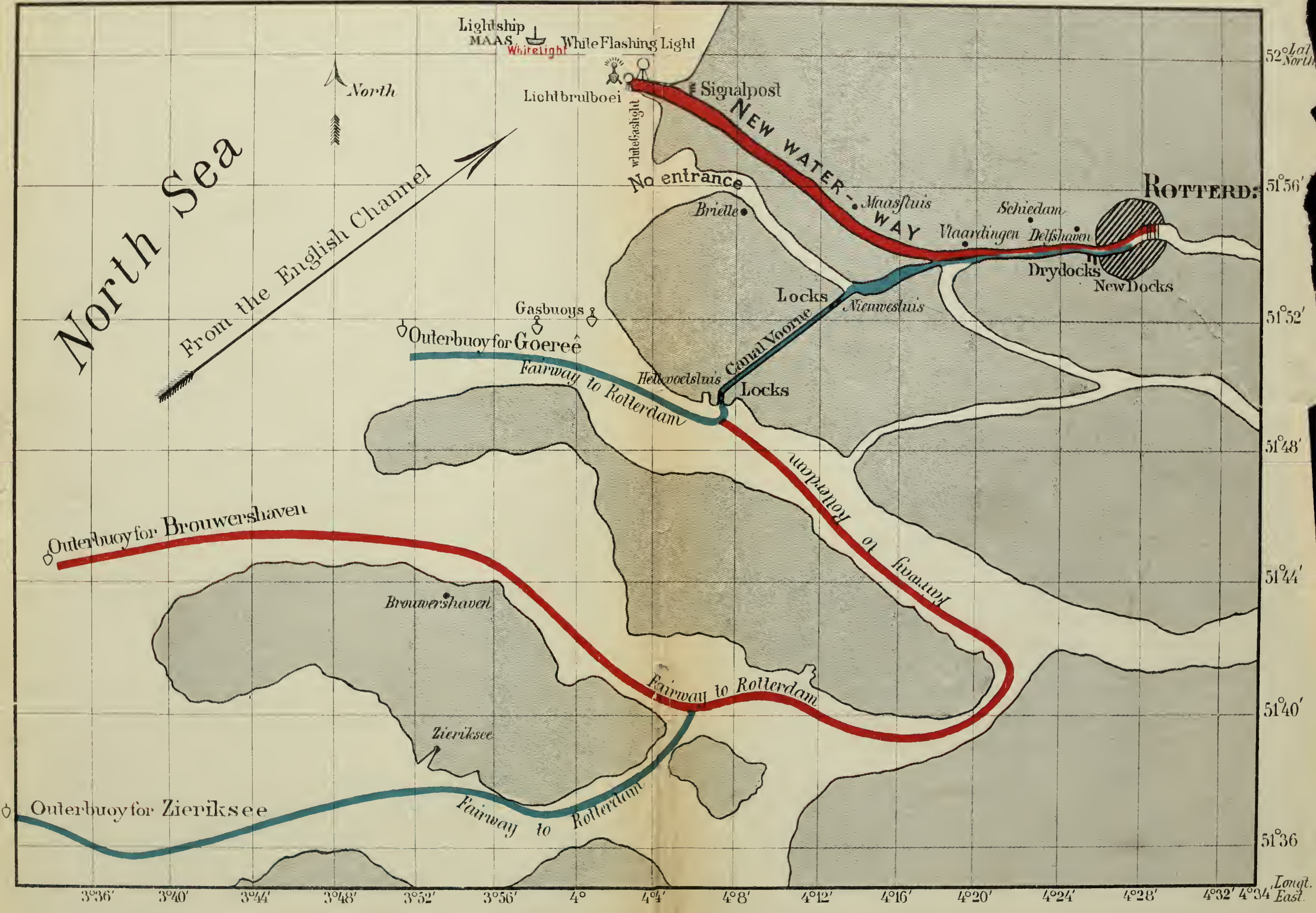
Collision-hole (17 X 4 ft.) patched. Pumped out and delivered into drydock at Rotterdam on the 27th of January next by the Salvage Company.

CHART
OF THE
DIFFERENT ENTRANCES ON THE DUTCH COAST
TO
ROTTERDAM.

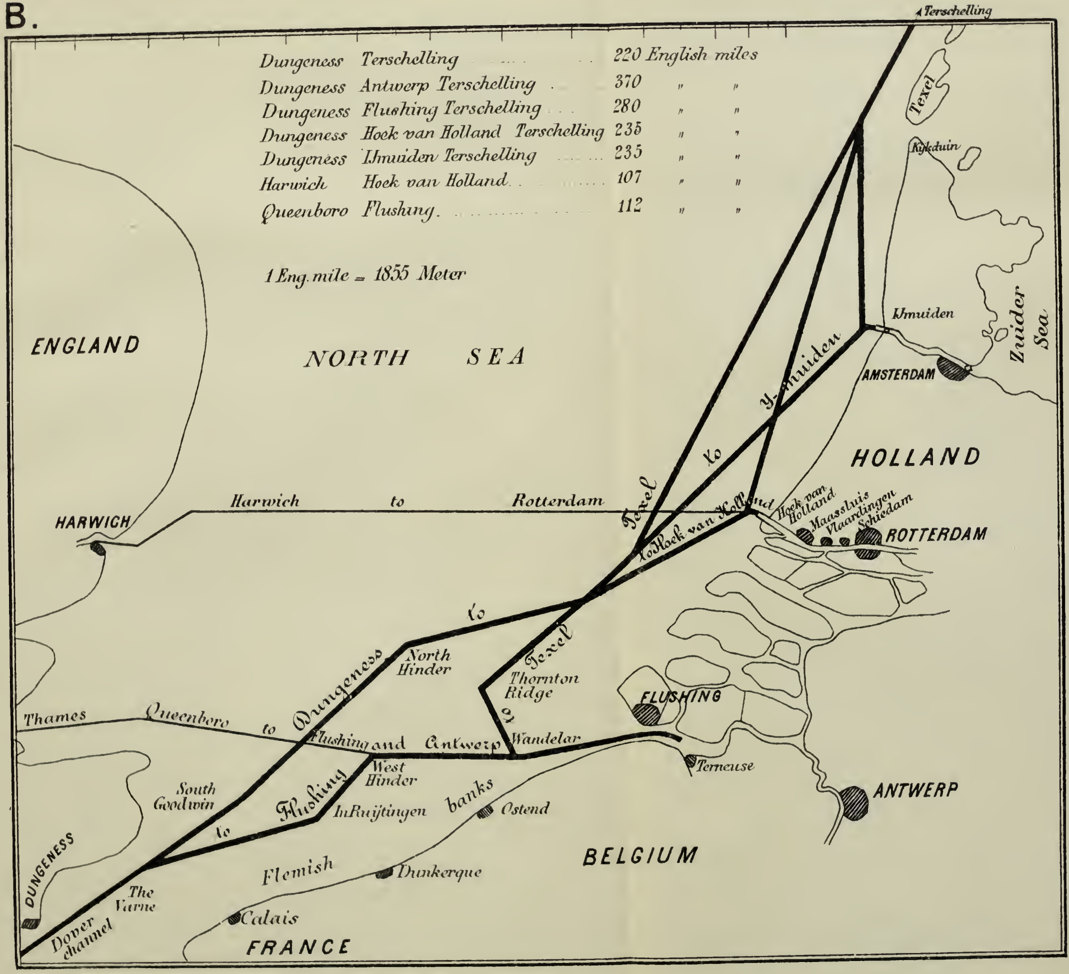
The distance from Sea *to* Rotterdam

by the New-Waterway *is*		18	*miles*	*Eng.*
from Hellevoetsluis *to* Rotterdam		45	„	„
„ Brouwershaven *to* Rotterdam *via* Hellevoetsluis		63	„	„
„ Zierikzee *to* Rotterdam		65	„	„
„ Vuurschip Maas *to* Hoek van Holland	14000 M. =	7½	„	„
„ Hoek van Holland *to* Maassluis	14000 „ =	7½	„	„
„ Maassluis *to* Rotterdam	18700 „ =	10	„	„
„ Hoek van Holland *to* Rotterdam	32700 „ =	17½	„	„

A.


North Sea
From the English Channel
North
Lightship
MAAS
White light
White Flashing Light
Lichtbrulboei
white Gaslight
Signalpost
NEW WATER-WAY
No entrance
Brielle
Maasfluis
Schiedam
Vlaardingen
Delfshaven
ROTTERD
Drydocks
New Docks
Locks
Nieuwesluis
Canal Voorne
Hellevoetsluis
Locks
Gasbuoys
Outerbuoy for Goereé
Fairway to Rotterdam
Fairway to Rotterdam
Outerbuoy for Brouwershaven
Brouwershaven
Fairway to Rotterdam
Zieriksee
Outerbuoy for Zieriksee
Fairway to Rotterdam
52° Lat. North
51°56′
51°52′
51°48′
51°44′
51°40′
51°36
3°36′
3°40′
3°44′
3°48′
3°52′
3°56′
4°
4°4′
4°8′
4°12′
4°16′
4°20′
4°24′
4°28′
4°32′
4°34′
Longt. East.

B.

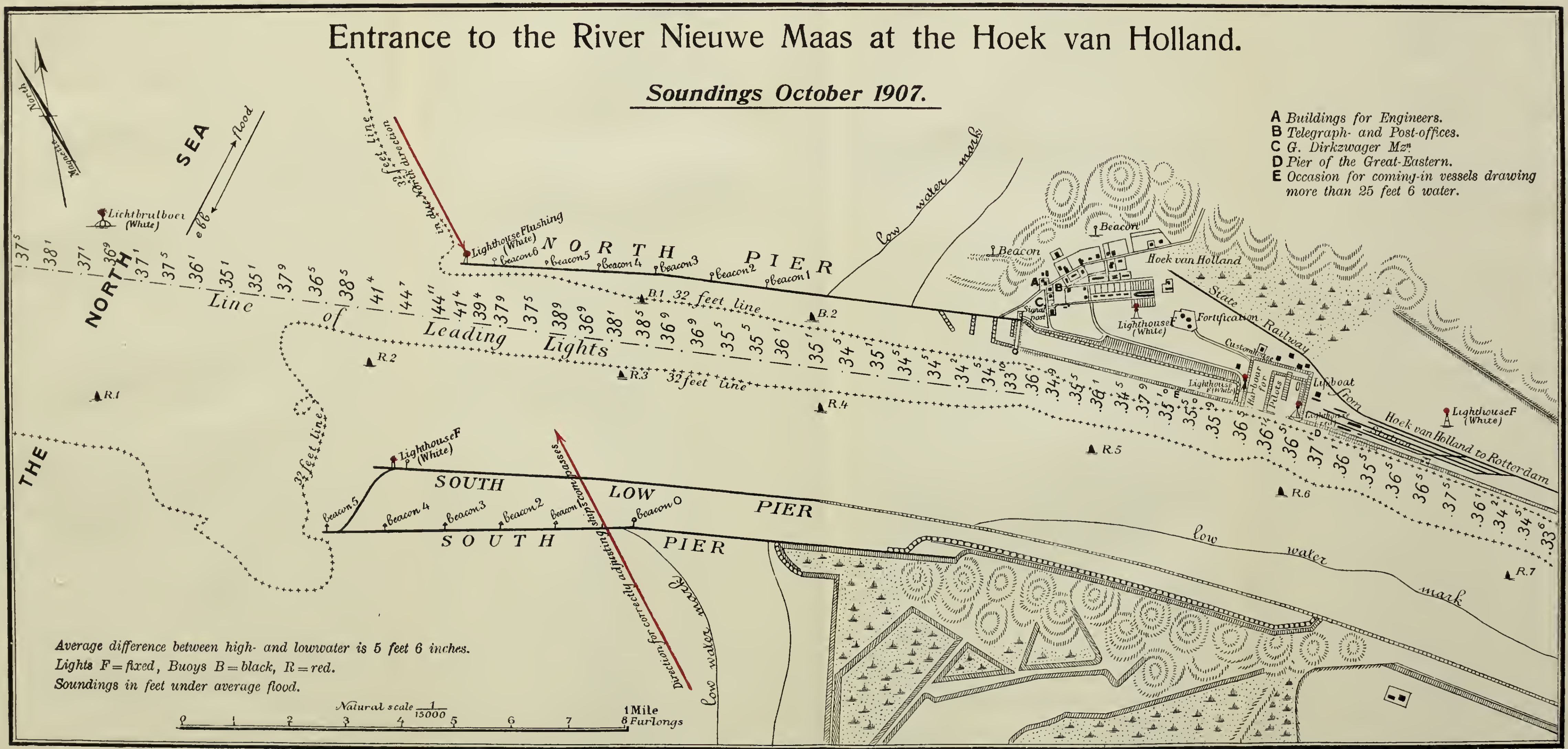


Dungeness	Terschelling	220	English	miles
Dungeness	Antwerp Terschelling	370	"	"
Dungeness	Flushing Terschelling	280	"	"
Dungeness	Hoek van Holland Terschelling	235	"	"
Dungeness	IJmuiden Terschelling	235	"	"
Harwich	Hoek van Holland	107	"	"
Queenboro	Flushing	112	"	"

1 Eng. mile = 1855 Meter

C.

NEW-WATERWAY.



Entrance to the River Nieuwe Maas at the Hoek van Holland.

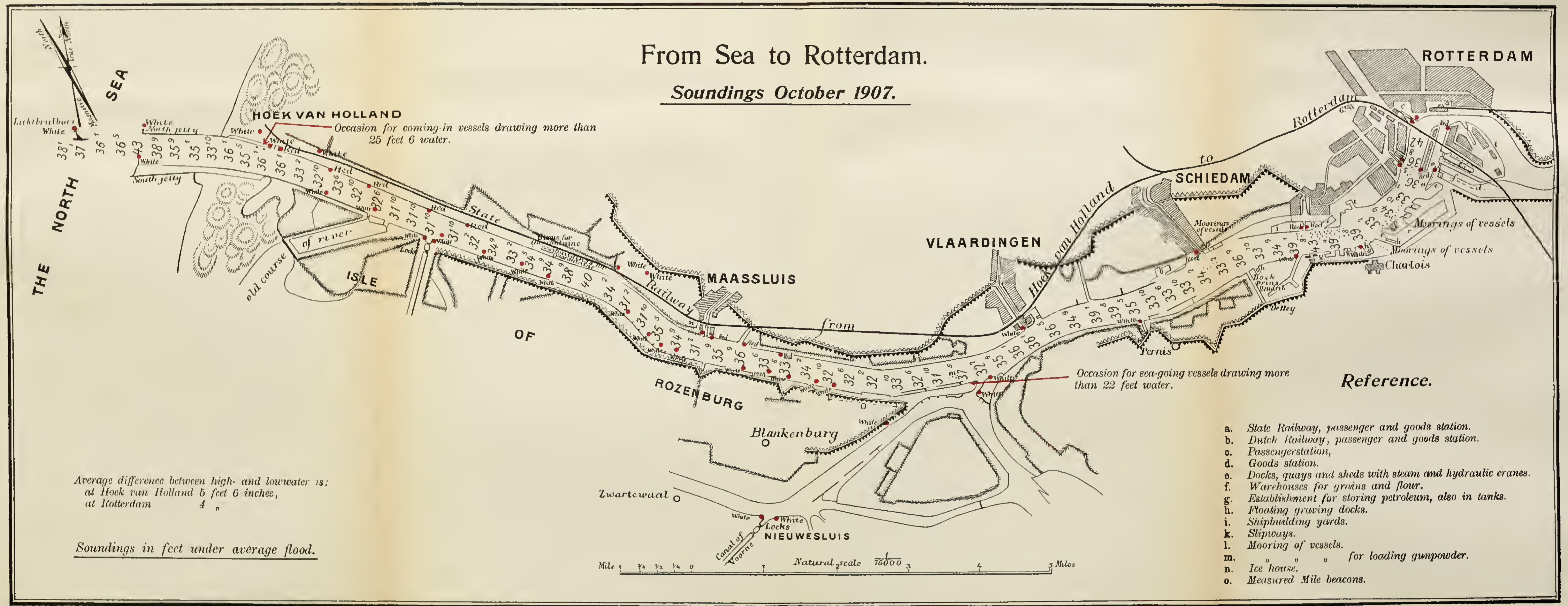
Soundings October 1907.

A *Buildings for Engineers.*
B *Telegraph- and Post-offices.*
C *G. Dirkzwager Mzn.*
D *Pier of the Great-Eastern.*
E *Occasion for coming-in vessels drawing more than 25 feet 6 water.*

Average difference between high- and lowwater is 5 feet 6 inches.
Lights F = fixed, Buoys B = black, R = red.
Soundings in feet under average flood.

D.

NEW-WATERWAY.



From Sea to Rotterdam.

Soundings October 1907.

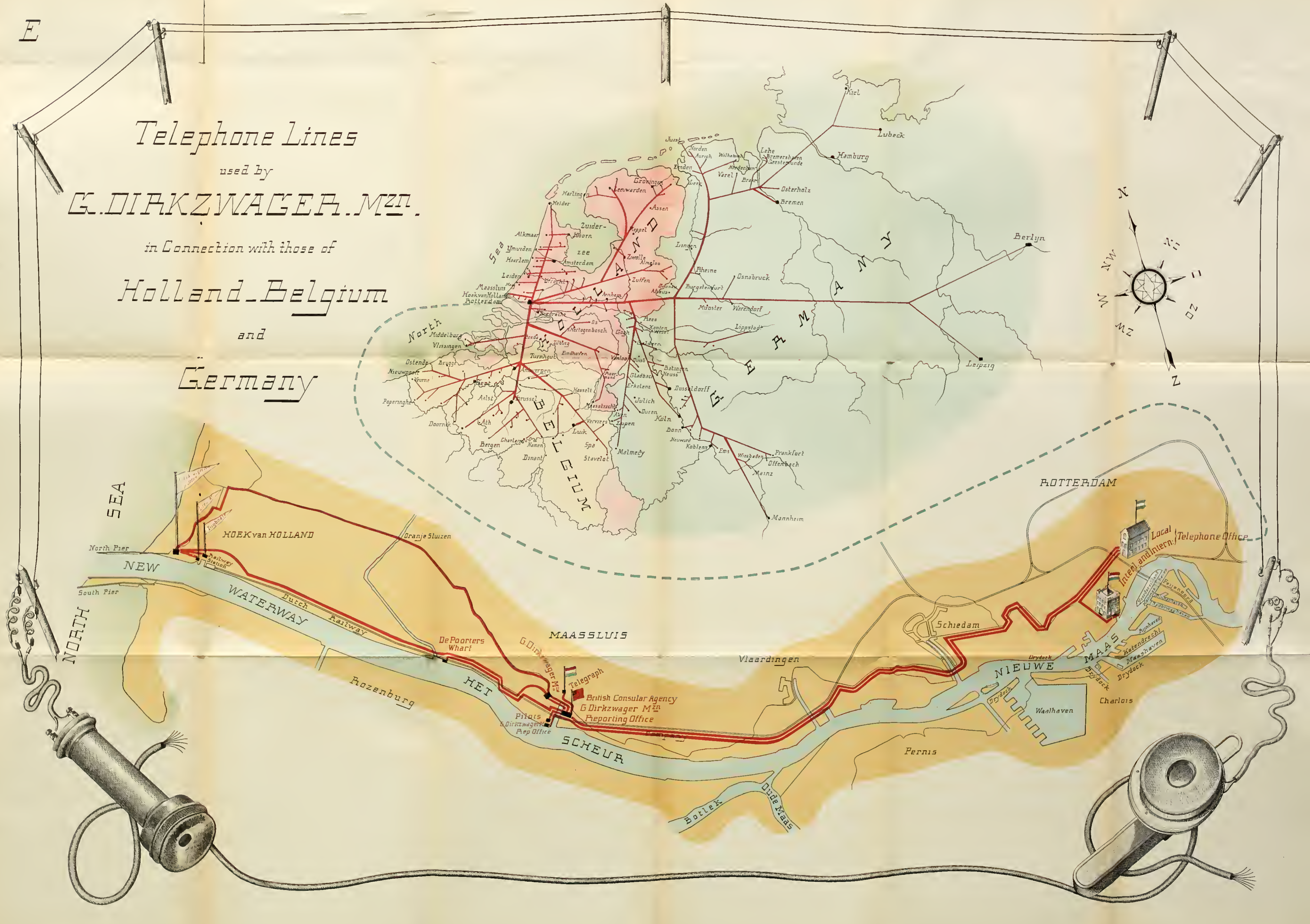
Average difference between high- and lowwater is:
at Hoek van Holland 5 feet 6 inches,
at Rotterdam 4 „

Soundings in feet under average flood.

Reference.

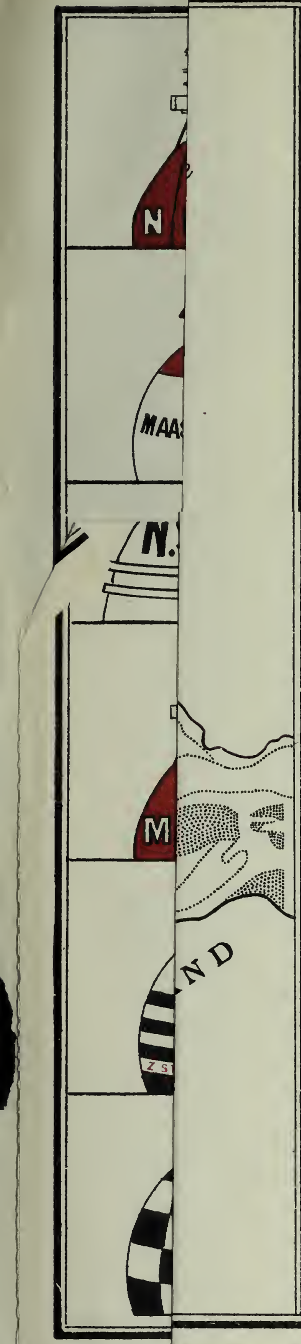
- a. *State Railway, passenger and goods station.*
- b. *Dutch Railway, passenger and goods station.*
- c. *Passengerstation,*
- d. *Goods station.*
- e. *Docks, quays and sheds with steam and hydraulic cranes.*
- f. *Warehouses for grains and flour.*
- g. *Establishment for storing petroleum, also in tanks.*
- h. *Floating graving docks.*
- i. *Shipbuilding yards.*
- k. *Slipways.*
- l. *Mooring of vessels.*
- m. *" " " for loading gunpowder.*
- n. *Ice house.*
- o. *Measured Mile beacons.*

E



Telephone Lines used by G. DIRKZWAGER. Mzn. in Connection with those of Holland-Belgium and Germany

F



STATIONS
der Zuid-Hollandsche Maatschappij tot redding van schipbreukelingen.

STATIONS
of the Zuid-Hollandsche Lifeboat Society.

TER HEIJDE.

⚑ 1

Waterloozende boot;
mortier en vuurpijlen toestel.

Selfemptying lifeboat,
mortar and rocket apparatus.

's GRAVENZANDE.

Selfrighting and selfemptying lifeboat.

⚑ 11

VLISSINGEN.

Zelfrichtende, waterloozende boot.

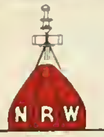
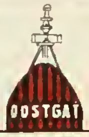
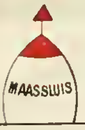
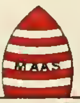
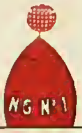
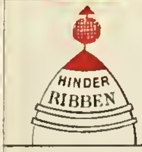
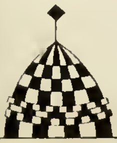
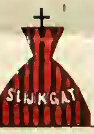
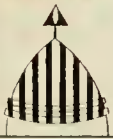
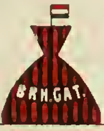
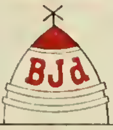
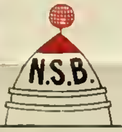
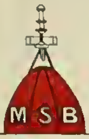
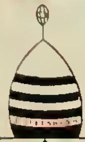
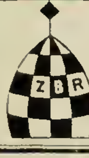
Selfrighting and selfemptying lifeboat.

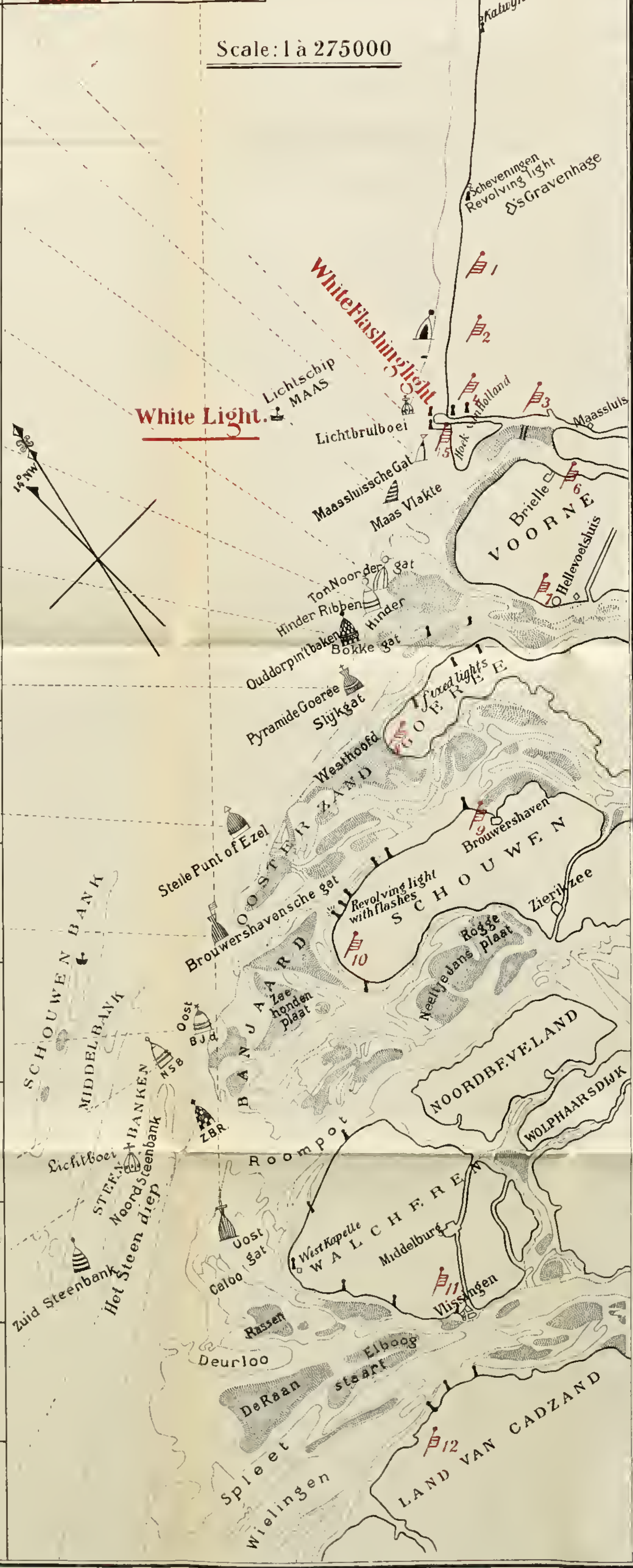
⚑ 12

CADZAND.

Vuurpijlen toestel.

Rocket apparatus.

	Lichtbrulboei Waterweg. *voor de monding* *in 5 vadem.*		Licht Brulboei *gemerkt* *Oostgat*
	Ton Oude Maassluische Gat *Brielle Z.0. t. Z.* *In 4 vadem.*		
	Ton van de Maas. *Brielle Z.0. ¼ 0.* *In 4½ vadem.*		
	Kleine Ton van het Nieuwe of Noorder Gat *Brielle Z.0. ¾ 0.* *In 2¾ vadem.*		
	Ton Hinderribben *Brielle Z. 0. t. 0 ½ 0.* *Goeree Z. ¾ W.* *In 7 vadem.*		
	Ton Ouddorp in 't baken. *Goeree Z.0 ¾ Z.* *Westhoofd* *Z.t. W. ¾ W.* *In 5½ vadem.*		
	Pyramide Goeree. *Goeree op baken* *Z. 0. ½ 0.* *Westhoofd Z. ¼ W.* *In 5 vadem.*		
	Ton Steile Punt of Ezel. *West-Schouwen* *Z. ½ W.* *Noord-Schouwen* *Z.0. ¾ Z In 8 vadem.*		
	Verkenningston Brouwershaven. *51° 45' 8" NB.* *3° 33' 8" OL.* *In 7 vadem.*		
	Oost- Banjaard-boei. *West-Kapelle* *Z.Z.W. ¼ W.* *West-Schouwen* *0Z.0. ¾ 0 In 9 vadem.*		
	Ton Noord-Steenbank *West-Kapelle* *Z. t. W. ¼ W.* *West-Schouwen* *0. t. Z. In 6 vadem.*		
	Lichtboei Middensteenbank *West-Kapelle* *Z. t. 0.* *West-Schouwen* *0. In 9 vadem*		
	Ton Zuid- Steenbank. *West-Kapelle* *Z.0. ¾ Z.* *West-Schouwen* *0. ½ N. In 8 vadem.*		
	Ton Zuid- Banjaard. *West-Kapelle* *Z. t. W. ¾ W.* *West-Schouwen* *0. ¾ N. In 6 vadem.*		



STATIONS
der Zuid-Hollandsche Maatschappij
tot redding van schipbreukelingen.

STATIONS
of the Zuid-Hollandsche Lifeboat Society

1 **TER HEIJDE.**
Waterloozende boot;
mortier en vuurpijlen toestel.

Selfemptying lifeboat,
mortar and rocket apparatus.

2 **'s GRAVENZANDE.**
Stalen waterloozende boot;
mortier en vuurpijlen toestel.

Steel selfemptying lifeboat, mortar and rocket apparatus.

3 **HOEK VAN HOLLAND.**
Stoom-Reddingboot.

Steam-lifeboat.

4 **HOEK VAN HOLLAND.**
Zelfrichtende, waterloozende boot; mortier en vuurpijlen toestel.

Selfrighting and selfemptying lifeboat, mortar and rocket apparatus.

5 **HOEK VAN HOLLAND.**
Zuiderhoofd.
Reddingboot en mortier.

Southpier.
Lifeboat and mortar.

6 **DEN BRIEL.**
Zelfrichtende, waterloozende boot.

Selfrighting and selfemptying lifeboat.

7 **HELLEVOETSLUIS.**
Zelfrichtende, waterloozende boot.

Selfrighting and selfemptying lifeboat.

8 **OUDDORP.**
Zelfrichtende, waterloozende boot en mortier.

Selfrighting and selfemptying lifeboat and mortar.

9 **BROUWERSHAVEN.**
Zelfrichtende, waterloozende boot.

Selfrighting and selfemptying lifeboat.

10 **BURCHSLUIS.**
Zelfrichtende, waterloozende boot.

Selfrighting and selfemptying lifeboat.

11 **VLISSINGEN.**
Zelfrichtende, waterloozende boot.

Selfrighting and selfemptying lifeboat.

12 **CADZAND.**
Vuurpijlen toestel.

Rocket apparatus.